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# NUMBERS & ODDITIES #
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[- N&O #04 -]

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Hi folks! We have two guest writers this month; Toby with his second cipher article and from Frode comes the Enigma article. Chris checks in with 'Atencion' stations profiles and I am very glad that Guy decided to write another 'Morse Stations Corner', although the response he got was next to nothing. Come on folks, we all can use your reactions, ideas, and input!

Because Jascha had e-mail problems and was unable to send me the logs section, I prepared a logs section with the help of Guy, which resulted in a morse stations special. Further a bunch of LP logs from first time contributor Darren Riley. Welcome to the 'Cloak and Dagger club', Darren! Only hours before the absolute dead line, Jascha's problems were over and he rushed the logs to me, hence the different line-up of the logs section.

Anyway, the logs section is huge this month. We still can use more morse and RTTY spooks logs though. Only three or four of you submitted morse logs while the morse stations are more active than ever. We like to extend our gratitude to everyone for sending those logs. Keep sending them!!!

As I am running out of time, I must postpone the second part of the jamming article till the next newsletter.

Latest news: Chris is working on a CD containing several hours of numbers stations transmissions and lots of info. We'll keep you posted. If you have interesting stuff for the CD, you can send Chris an e-mail on cps@access.digex.net

#### \* MORSE STATIONS \*

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I have decide to continue with my morse stations column for the time being, even though I only had a limited response to my last months comments. I have been sending in some logs of morse stations to Ary to be shown in the logs section. As you will see there are a large number of them, and hopefully it might persuade some of you to learn the morse code and log some of them.

I have been asked about receiving morse with some of the data decoders that are on the market. I have been carrying out some tests over the past few weeks to see which of them was best. The ones I have tested are the PK232, Code 3, Code 3 Gold, and Hamcomm 3.

I have come to the conclusion that none of them are really up to the mark for this. Possibly because of the on off nature of morse signals. A large majority of numbers stations are either very weak or have QRM on the frequency.

I have tried out these decoders and found it virtually impossible to make any sense out of the majority of those I tried to decode. The PK232 only seems to like very strong signals, and then does not like slow speeds. Another problem is getting the spacing correct, if the morse is a little slow then the decoder prints a space between each letter. Really the best thing for decoding morse are two ears and a brain. As the number of stations on are so many I think it worth while trying to learn the code.

I would suggest that it would be a good start to just learn figures from 0 to 9 and a couple of the signs = which is BT, Dah dit dit dit dah, AR which is Dit dah dit dah dit and the slash sign / which is Dah dit dit dah dit. With those you will be able to copy the majority of them. Not forgetting of course T for short Zero.

I have also been doing some tests with help, as to how many of them are audible in the USA and at the moment it does not seem that there are many that can be heard. M8 is one, I think that comes from Cuba, although I think the ones that we hear in the UK are broadcast from Europe as they are such strong signals. Another one I know was heard and that is M12, normally very strong in the UK. Trouble is that it is not very good for starters as it sends at 30 WPM.

Possibly as we progress through the sunspot cycle things might improve. The time difference does not help as there are a lot on during what is the middle of the night for the USA.

I am not sure if they will as conditions in the first week in July have been really bad. I normally receive M1 and M10 with very good signals but they have been almost unreadable this week. One station that I am looking for reports of, particularly those of you in Europe, is the M10 that comes on 5705 at 1000, almost every day. It is slightly different to the usual M10 in that it uses 5 figure IDs and there are no pauses in the Auto sending. I have yet to hear it other than extremely weak, so I wonder if anyone else can hear it and give me some idea of the signal strength from their location. The normal M10 is a very good signal with me.

I am continuing with the profile of some more stations, and then at the

end of the column I will give some news of recent happenings.

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#### M13 & M13A

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M13 sent in ICW very rarely in MCW. Another group constantly changing frequencies and times. Can be found on anywhere between 3.8 and 12 Mhz. Can be recognized as it is sent very slowly, about 9 WPM, and the signal is very strong in the UK. Messages are usually about 23 groups but they have been known to send up to 80 groups. The message is sent four times in a period of 4 weeks. Has been logged between 1600 and 1000 the next day, on the hour but transmissions at Hour+30 and Hour+ 50 have been noted. A popular time seems to be at 2100 and 2200.

Repeat sequences that have been logged

- On the same day 1 Hour later on the same frequency.
- On the same day 1 Hour later on a different frequency
- On the next day at the same time on the same frequency
- On the next day at the same time on a different frequency
- On the same day 2 Hours later on the same frequency and also the next day the same.

The sequence is then repeated 2 weeks later with the same message. The next transmission will be 2 weeks later, with a new message on a different frequency. It has also been noted that some only transmit once a month. Now that I have been logging these stations for 1 year, some of them are coming on the same frequency that they were on 1 year ago, so it would seem that they are using a twelve month cycle of frequencies.

Call	Preamble	Message	Repeat	Ending
261 R5 =	189 22 =	22x5f	ID sent x12 =	189 22 = 3 long dashes

M13A Format is the same only the ID is sent as

847 847 847 000 R5      Repeat is 4 times

This format can easily be confused with M12. It has become very rare that they use this format, I have only heard it once this year.

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#### M14

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M14 Modes ICW, MCW, and MCW CC. Similar format to M1, machine sent, but ends with 5 zeros. Longer messages than M1. The last group in the message is random and not as M1 Date/Group count. Another group everlasting changing times and frequencies. Variations exist.

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M16

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M16: 8BY Mode ICW. Uses long zeros.

Call	IDS
VVV VVV VVV 8BY 8BY 8BY	605/432/679/236

The IDs can be any number up to 12, they can remain the same for several transmissions, or change by having one ID go and leave the rest, such as 432/679/236. IDs are always in the same sequence. Transmission is at each hour+40 for 20 minutes. Up to 3 frequencies in parallel.

My own theory for this group is that it is just a list of IDs that there is a message waiting for and the ID collects the message possibly on another frequency or by other means.

Can also use Q and Z codes

If no IDs sends QRU

Example of ZKY= 142 825 047 ZKY/759

Example of ZCC= 142 047 ZCC 11 18/439 ZCC 10 16/306/146

Frequencies in use are:

7668 10248 12075 12170 12283 14433 14925 14931 18415 20946

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M17

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M17 Mode MCW Constant carrier. Each message sent 3 times each on a different frequency. They do use the same triplets of frequencies for each time slot. Transmissions are Monthly 2 weekly or weekly, on week of each month basis. Either on the Hour, Hour+20 Hour+40 Or Hour+30 Hour+50 Hour+70.

Mainly on during the evening but have been heard at other times of the day. Changes times with the season, 1 hour later in Winter

Call	Preamble	Message	Ending
70832 R4 5 Seconds Dots	29 29 =	29x5f	VA

First 2 figures of header are schedule numbers.

Frequencies used:

3410 3910 4270 4460 4740 5235 5695 5865 6290 6675 6935 7425  
7790 8070 9050 9245 10470

Other skeds are Monday 2030 4740/4460/4270  
Tuesday 1900 4460/4740/4270  
Wednesday 0800 7425/6675/5865  
Wednesday 1600 5865/4740/4270  
Wednesday 1900 3410/3910/4740  
Thursday 2030 3410/3910/4740

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M20

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M20 Part of the M3 Family.

Sends a varying amount of Vs then = = 000

Has been known to send VVV = = 000 and up to 5 minutes of Vs

Uses same frequencies as M3

-0-0-0-0-0-0-0-0-0-

Morse stations round-up

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Here is the news of what is happening on the bands.

M1: Continues with its normal skeds, will be ID 025 until the end of August. It used to have a regular message length of 40 groups, but for the past few months this has dropped down to 32 to 37 Groups. Now in July it is back sending longer messages now up to 44 groups. As you may know it never repeats these messages.

There are some changes going on as it did not have the end of month special transmissions in June, 1997 June was the same.

On Tuesday 7 July and Thursday 9 July it missed the 2000 transmission on 4905. It has been known to miss the 2000 sked, but I think this has only happened once before.

M1B: Skeds at present are as follows although they are liable to change.

Listed as Time/Frequency/ID

Monday	1718/5220/719	2010/5812/729
Tuesday	1723/6283/382	
Wednesday	1510/5473/745	1718/5220/719
Thursday	1503/6823/168	1723/6283/382 2032/5750/931
Friday	2102/5750/871	
Saturday	1605/5350/053	1855/5777/127

It is very rare for M1B to have problems, but on Thursday 7 July the 1723 transmission on 6283 started breaking up at the end. The 2032 transmission on 5737 was entirely broken. The interesting thing is that M1 at 1800 had a perfect transmission, so it looks like M1 and M1B have

separate transmitters. There are probably other skeds and any reports of those would be appreciated.

M3: Still plenty of activity from 0630 to 1400. A lot of the IDs never receive a message. The afternoon sked at 1630 on 7256 and the Saturday morning at 0800 on 9272 are still running.

M4: Only on now the second week of each month, On Monday, Wednesday, and Thursday. 0957 on 7250, 1157 on 8188, 1257 on 5748. Sends the same message all the week.

M7: A very difficult one to catch as it only has a call up of 1 minute and has no particular sked. Tends to come up at Hour plus 20 and hour plus 50. Uses M10 frequencies

M12: Still continues to send the same message on every Sunday. Changes frequency each month. I have recently been finding some of these on in the mornings, 0630 onwards using similar frequencies to V7 and XPH.

M10: Still plenty of activity. One I would like reports of is on at 1000 each morning on 5705. It is never a very good signal in the UK, but I think it is on every morning. I first logged it a year ago. It uses 5 figure IDs usually 4 with short messages.

M13: Still as elusive as always. Trouble is that it can appear anywhere, I found one under a broadcast station. I have found one way to find them is to look back in my old logs as they use the same frequency on a yearly basis.

M23: Has recently returned to 6999 at 1000, used to be a regular frequency but has not been there for several months. Still on at 1500 on 7795, repeating messages that started in April.

M24: Still difficult to find as it is everlasting changing frequencies and times. As M13 does come on same frequencies as a year ago. Logged one at 1920 on Thursday 9 July on 9260. One of the very fast ones, 40 WPM

M29: On each day at 1700 and 1900, sends the same message for a week starting on Monday. The same groups are often repeated several times in the message and also appear week after week.

M51: Still sending endless streams of 100 5 letter messages. It broke its own record recently, was on for over 5 and a half hours. Has been noted on for over 13 hours in one week.

M53: On most evenings, but usually a very poor signal in the UK. Another one I would like some reports of to get some idea where it may be. Is on most evenings at 2000 on 8231

Hope you have found this interesting, perhaps some of you seeing the amount of stations active, might be persuaded to have a go at learning morse.

-o-o-o-o-o-o-o-o-o-

Thanks Guy, excellent stuff as always. Like many of you I am not a skilled morse listener. After Guy sent me his article, I decided to browse the web for a morse trainer. The amount of morse software is incredible, varying from very basic to very advanced software, free programs, shareware and commercial. A large number of programs can be found on the Funet FTP site:

```
HOST    = ftp.funet.fi
User id = anonymous
DIR     = pub/ham/morse
```

I have tried some 15 different morse programs and one of my favorites is NuMorse 1.40. A nifty shareware program for Windows. Here a brief description:

NuMorse 1.40 Morse Code trainer for Windows 3.1+  
Shareware; registration \$29.00

Options: Code via sound card /PC speaker/Code oscillator/Semaphore window. Code source is random generator/text file/QSO generator. Select characters + weighting. Set code speed/timing or let program adjust speed. Farnsworth code/prosigns supported. FCC type tests+QSOs generated. Drill mode, monitor progress/correct error using voice phonetics. +Much more.

You can retrieve NuMorse 1.40 from the Funet FTP site.

BTW, have a look at the pub/.../utility directory as well. Lots of good stuff on Funet! -Ary-

HIGH PITCHED POLYTONE (XPH)

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Andy Bell <andy.bell@sabwabco.co.uk> sent us the daytime (UTC) sked for the XPH station.

06.00 UTC, 9441 kHz AM

06.20 UTC, 11041 kHz AM

06.40 UTC, 12141 kHz AM

Transmissions are on Wednesday and Friday.

There are also nighttime transmissions; the times and frequencies are unknown to me, but are probably at 21.00, 21.20 and 21.40 UTC, although I am not sure about this. Note that they change the frequencies each month.

The following freqs were used in June: 9394, 11494, 13394 kHz. Does anyone know if the same sets of freqs are repeated after a certain period?

Every now and then the station sends 'null' messages, just like the 'normal' voice and morse stations do.

Andy sez ''Sounds like the station call up is 4 tones (ident?) repeated, followed by 2 tones (group count?) then into tone groups''

Hans-Friedrich Dumrese heard the following sequence:

4 Tones (like A-C-A-F)       )  
4 Tones (like A-C-A-F)       ) repeated for 2 mins  
4 Tones (like A-C-A-F)       )  
2 Tones (like G-D)            )

and at the end I counted 12 tones, Hans-Friedrich.

Following this scheme, this could mean

3 tones - id of the receipient  
1 tone - number of messages  
2 tones - group count  
message  
12 tones - two groups of six zero's

Do we have someone in the audience who can write a decoder program for these signals? Who wants to accept this challenge?

Comments are most welcome!

★ VOICE STATIONS ★

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★ Cuban Atencion Stations (ENIGMA V2) ★

The Atencion stations are most probably the easiest numbers station to hear in North America. While transmissions have been heard at all hours, the most common times are from 0000-1200Z. Frequencies generally range from 4 - 12 MHz, although higher and lower frequencies have been used in the past.

3060 and 3090 kHz were extremely heavily used frequencies. 6840 kHz was also heavily used, but also by other numbers stations! The Counting



Station, The Skylark, and MOSSAD (which still uses the frequency) could all be heard on 6840 kHz, sometimes more than one station was on at the same time!

Transmissions are always in Spanish. Transmissions are often of a poor technical quality, with hum and other noise frequently present. It is also not uncommon to hear other audio mixing into the numbers transmission, usually identified as Radio Havana Cuba, which does give away the transmitting location.

In the past, most transmissions used to repeat at H+30 many kHz up or down in frequency. This is not the case anymore, transmissions always begin on the hour. Well - they're supposed to. The Atencion stations are [in]famous for their technical glitches. It is not uncommon for there to be a few false starts before the transmission finally gets going.

V2 is has a sister morse code station - M8. It transmits messages of 150 groups using cut numbers. (letters used to represent numbers)

These are the formats that have been used by the Atencion Station. Formats 2 and 6 are still in use today, although format 2 is rarely heard. Format 6 replaced format 5 on January 1, 1997. This format always transmits three messages, with each message having 150 groups.

The number of finals heard at the end of the transmission varies, it is always either two or three. To date, no one has come up with a satisfactory explanation for the varying number of finals.

#### -o-o-o- Atencion Station Formats -o-o-o-

##### \* Format 1: [obsolete]

Atencion 485 31	Repeated for several minutes
47383 59393 10322 93984 29494...	Message, in this case 31 groups
Final Final	Used to be "Adios" years ago

##### \* Format 2: [still in use, somewhat rare]

Atencion 823 01	Repeated for several minutes
01 45	Repeated for one minute
47383 59393 10322 93984 29494...	Message, in this case 45 groups
Final Final	

##### \* Format 3: [obsolete]

Atencion 237 01 32	Repeated for several minutes
32	Repeated for one minute
47383 59393 10322 93984 29494...	Message, in this case 32 groups
Final Final	

\* Format 4: [obsolete]

Atencion	Repeated three times
643 23	Repeated once
47383 59393 10322 93984 29494...	Message, in this case 23 groups
Final Final Final	

(this format was only observed on live transmissions)

\* Format 5: [obsolete]

Atencion 65848	Repeated for several minutes
65848 150	Repeated
47383 59393 10322 93984 29494...	Message, always 150 groups
Final Final (two or three finals)	

\* Format 6: [still in use, most common format]

Atencion 72302 51782 41592	Repeated, messages to 72302 51782 41592
72302	Repeated five times
03832 13983 79833...	First message, always 150 groups
51782	Repeated five times
04383 34932 88939...	Second message, always 150 groups
41592	Repeated five times
49393 63832 12393...	Third message, always 150 groups
final final	End of transmission, sometimes
three finals	

ENIGMA does not presently distinguish between the different formats. (they used to distinguish between two or three finals at the end of the transmission, but I believe this is meaningless). I do believe that the two formats presently in use should be distinguished, at least by a letter suffix. Ideally, for continuity, suffixes should be assigned for all six formats that were used, with four marked as inactive or obsolete. Most of the transmissions are of format 6. However, format 2 transmissions are heard. Indeed, if a schedule of transmissions is created, it will be found that a time slot is either format 2 or 6, it does not change from week to week.

Two voices have been noted - one is a younger sounding YL with a higher pitched voice, the other sounds older, with a lower pitch. Some attempts have been made to determine if a given time slot always uses the same voice or not, but more work is needed in this area.

-o- Some recently used frequencies by the Cuban Stations -o-

3292	3410	3444	3926	4017	4020	4027
4174	4328	4479	4601	4610	5087	5118
5135	5407	5415	5417	5420	5470	5682
5760	5762	5762	5771	5800	5810	5900
5903	6228	6293	6768	6778	6787	6797
6800	6825	6854	6856	6867	6872	6888

6890	6892	6920	6933	6935	6942	6953
6983	6995	7425	7435	7480	7482	7520
7525	7580	7648	7682	7726	7743	7755
7845	7860	7887	7890	8010	8018	8066
8126	8136	8150	8165	8186	8240	8380
8790	8873	8980	8992	9120	9140	9237
9251	9255	9330	9925	10125	10180	10270
10345	10510	10713	10865	11125	11215	11468
12144	13373	13419	14180	14736	14770	14825
17425	17520	18035	18434	20316	21865	

In the past, a CW "ID" was often heard at the beginning of a transmission. It was "DE ? HI" which, 'translated' from CW into English, means 'Origin unknown, ha ha'. If someone has an older recording of such a CW ID, I would greatly appreciate getting a copy.

#### THE LINCOLNSHIRE POACHER (E3)

by Simon Mason, revised by Ary Boender

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One of the most famous numbers stations is E3, nicknamed 'the Lincolnshire Poacher', after it's interval signal. The station is believed to be operated by British intelligence (MI6) and beamed into Iraq and Iran from Cyprus, or possibly other British facilities in the Middle East and England. The Poacher is subject to jamming from Iraq and/or Iran.

Here is an updated version of Simon Mason's station profile, followed by the transmission schedules, courtesy of the ENIGMA group. -Ary-

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On the hour the interval signal is played twelve times, followed by a five figure header read ten times by a woman. This is repeated for ten minutes. After that, six tones are transmitted followed by exactly 200 five figure groups. At 45 minutes past the hour the interval signal is sent once again and then the station stays silent until the start of the next hour.

The woman has a distinct British accent. As noted before, these transmissions are always jammed by warble jammers which are extremely powerful and effective and have followed the station around during its frequency changes.

The tune used is a very old English folk song called "The Lincolnshire Poacher". The county of Lincolnshire is in eastern England, just south of the river Humber and is mainly flat agricultural country. The tune itself dates from around 1776 but might belong to an even earlier time. It is the most famous of all English county songs and is not only the

signature tune for Radio Lincolnshire, its rousing chorus has been sung wherever "Yellow Bellies" (Lincolnshire folk) have travelled. Here are the lyrics of the song:

'When I was a bound apprentice in famous Lincolnshire Full well  
I served my master for more than seven year. Till I took up with  
poaching, as you shall quickly hear:

Oh, 'tis my delight on a shiny night in the season of the year.

As me and my companions were setting of a snare 'twas there we  
seed a gamekeeper- for him we did not care, For we can wrestle  
and fight my boys, and jump o'er everywhere.

Oh, 'tis my delight on a shiny night in the season of the year.

As me and my companions were setting four or five And taking on  
him up again, we caught the hare alive We caught the hare alive,  
my boys, and through the woods did steer:

Oh 'tis my delight on a shiny night in the season of the year.

Bad luck to every magistrate that lives in Lincolnshire. Success  
to every poacher that wants to sell a hare Bad luck to every game-  
keeper that will not sell his deer.

Oh 'tis my delight on a shiny night in the season of the year.'

The choice of a folk song is interesting. Another numbers station used a folk song of Romania. Perhaps they are intended to instil a patriotic feeling in the people concerned?

When I first heard this station on 21 December, 1988 it was using 6485 and 5422 in parallel from 1700-2200. The warblers then discovered it and it then moved to 5422/5756 in March, 1990. After a while it moved again, this time to 8464. Eventually it settled on these five frequencies: 14487/15682 anytime between 0500-1800 and 7887/8464/9251 anytime between 1500-2200 UTC.

There was a brief flirtation with 6959 for awhile but this has ended. Many additional transmissions outside these times have been noted, for example at 0300 it was on 6959/7887/9251 and also at 0500 on 7887/8464/9521. There have also been many tests.

Some errors have been noted, the most common being when the transmissions change frequency at 1800. Prior to 1800 14487/15682 are used and sometimes the 1800-1845 transmission begins on these two frequencies by mistake. The jammers then start up on 14487/15682, ready to block the message. At about

1803 someone realises the evening schedule is in operation and switches to 7887/8464/9251. The warblers are then "woo-wooing" away on 14487/15682 until they wake up and move to the other frequencies.

LINCOLNSHIRE POACHER SCHEDULE (E3)  
(Schedule courtesy ENIGMA group)

UTC	MON	TUE	WED
10 H	16084/15682/14487	D 16084/15682/14487	H 16084/15682/14487
11 D	16084/15682/14487	H 16084/15682/14487	D 16084/15682/14487
12 F	16084/15682/14487	F 16084/15682/14487	F 16084/15682/14487
13 I	16084/15682/14487	I 16084/15682/14487	I 16084/15682/14487
14 B	14487/12603/10426	C 16084/14487/11545	D 16084/15682/14487
15 A	15682/13375/11545	B 10426/ 8464/ 7755	C 16084/14487/11545
16 H	13375/12603/11545	A 15682/13375/11545	B 10426/ 7755/ 6485
17 G	11545/ 8464/ 6959	H 13375/12603/11545	A 16475/14487/12603
18 F	12603/ 9251/ 7337	G 9251/ 6959/ 5746	H 11545/ 9251/ 6959
19 E	12603/ 9251/ 7337	I 11545/ 9251/ 6959	G 8464/ 6485/ 5746
20 I	11545/ 9251/ 6959	F 12603/ 9251/ 7337	I 11545/ 9251/ 6959
21 D	11545/ 9251/ 6959	E 12603/ 9251/ 7337	F 12603/ 9251/ 7337
22 C	11545/10426/ 6959	D 11545/ 9251/ 6959	E 12603/ 9251/ 7337

UTC	THU	FRI	SAT
10 D	16084/15682/14487	H 16084/15682/14487	H 16084/15682/14487
11 H	16084/15682/14487	D 16084/15682/14487	D 16084/15682/14487
12 F	16084/15682/14487	F 16084/15682/14487	F 16084/15682/14487
13 I	16084/15682/14487	I 16084/15682/14487	I 16084/15682/14487
14 E	16084/15682/14487	F 16084/15682/14487	G 14487/11545/10426
15 D	13375/12603/11545	E 13375/12603/11545	F 13375/12603/11545
16 C	14487/12603/ 8464	D 13375/12603/11545	E 13375/12603/11545
17 B	8464/ 6485/ 5422	C 16084/13375/11545	D 13375/12603/11545
18 A	16475/14487/12603	B 8464/ 6485/ 5422	C 16084/13375/11545
19 I	11545/ 9251/ 6959	A 15682/13375/11545	B 8464/ 6485/ 5422
20 H	11545/ 9251/ 6959	I 11545/ 9251/ 6959	A 11545/10426/ 6900
21 G	9251/ 6959/ 5746	H 11545/ 9251, 6959	I 11545/ 9251/ 6959
22 F	12603/ 9251/ 7337	G 9251/ 6959/ 5746	H 11545/ 9251/ 6959

UTC	SUN
10 D	16084/15682/14487
11 H	16084/15682/14487
12 F	16084/15682/14487
13 I	16084/15682/14487
14 A	16084/15682/14487
15 H	13375/12603/11545
16 G	11545/10426/ 8464
17 F	13375/12603/11545
18 E	12603/ 9251/ 7337
19 I	11545/ 9251/ 6959

20 D 11545/ 9251/ 6959  
21 C 9251/ 6959/ 5746  
22 B 8464/ 6485/ 5422

#### CHERRY RIPE (E4)

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E4 aka 'Cherry Ripe', also uses an old folk song as interval signal. The station is a sister station of the 'Lincolnshire Poacher' and is also believed to be operated by MI6.

On the hour the interval signal (Cherry Ripe) is played twelve times, followed by a five figure header read ten times by a woman. This is repeated for ten minutes. After that, six tones are transmitted plus exactly 200 five figure groups. At 45 minutes past the hour the interval signal is sent once again and then the station stays silent until the start of the next hour.

The transmissions originate most probably from a site in the Far East. Guam is a possibility.

#### CHERRY RIPE SCHEDULE (E4) (Schedule courtesy Simon Denneen)

UTC	Frequencies	UTC	Frequencies
00.00	15624/19884/22108	01.00	15624/19884/21866
10.00	10452/15624/17499	11.00	9263/13866/14469
12.00	8320/12056/13866	13.00	7484/11570/13866
22.00	9263/12056/15624	23.00	17499/20474/23461

#### RUSSIAN MAN (S7) SCHEDULE

-----  
05.00 UTC, 8167 kHz AM  
05.20 UTC, 9367 kHz AM  
05.40 UTC, 11167 kHz AM

#### THE ENIGMA MESSAGE

-----  
You probably all know the story of the ENIGMA cipher machine. A very nice Windows program called Enigma97, shows how the Enigma machine works, and you can even try it yourself. Download your own copy from <http://www.blueangel.demon.co.uk/enigma.html>

Some time ago, when the Enigma was mentioned on Spooks, someone asked me if I could help him to an actual Enigma message. Frode Weierud has the text of a message and he kindly permitted us to publish his article

in our newsletter. Much appreciated Frode! Check Frode's home page for more info: <http://wwwinfo.cern.ch/f/frode/www/crypto/>

o German Army Enigma Message

In the Cryptologia article by C.A. Deavours and Louis Kruh, "The Turing Bombe: Was It Enough?", Cryptologia, Vol. XIV, No.4, October 1990, pp. 331-349, there is on page 342 a facsimile of a teleprinter message which contains a cipher text in three parts. These three parts had been enciphered on the German Army's Enigma machine.

First of all the date given for this message as 21 September 1939 is wrong, it should be 21 September 1938. Secondly on page 346 the decrypts of the three parts are given in German with the indication that they contain garbles. This is true, but nevertheless difficult to understand why, as the three parts as given in the facsimile can be decrypted almost 100% without garbles. The only error is the 24th group in part II, YRORP, which should be XRORP.

The three parts have been successfully decrypted and are set out below. First as the separate three parts and then as an assembled, but still 100% authentic decrypt in German. To ease understanding and translation this completely assembled whole has then been rewritten in more standard German with punctuation and abbreviations in full.

It should be stressed that the construct Z X ZT which the Cryptologia authors thought was a possible map reference is meant to be z.Zt which is a very common German abbreviation for 'zur Zeit', at this moment.

The essential part of the facsimile is given below.

o Teleprinter message:

Fernschreiben H.F.M.No. 563

+ HRKM 13617 1807 -

AN HEERESGRUPPENKOMMANDO 2=

06 18 24 (FRX)

2109 -1750 - 3 TLE - FRX FRX -

1TL -172=

01 07 09 (In pencil; AGI)

HCA LN UQKRQ AXPWT WUQTZ KFXZO MJFOY RHYZW VBXY S IWMMV WBLEB  
DMWUW BTVHM RFLKS DCCEX IYPAH RMPZI OVBBR VLNHZ UPOSY EIPWJ  
TUGYO SLAOX RHKVC HQOSV DTRBP DJEUK SBBXH TYGVH GFICA CVGUV  
OQFAQ WBKXZ JSQJF ZPEVJ RO -

2TL - 166 -

25 02 05 (In pencil; YBE)

ZZWTV SYBDO YDTEC DMVWQ KWJPZ OCZJW XOFWP XWGAR KLRLX TOFCD  
SZHEV INQWI NRMBS QPTCK LKCQR MTYVG UQODM EIEUT VSQFI MWORP  
RPLHG XKMCM PASOM YRORP CVICA HUEAF BZNVR VZWXX MTWOE GIEBS  
ZZQIU JAPGN FJXDK I -

3TL - 176 - 12 21 14 (In pencil; LUN)  
DHHAO FWQQM EIHBF BMHTT YFBHK YYXJK IXKDF RTSHB HLUJ MFLAC  
ZRJDL CJZVK HFBYL GFSEW NRSQS KHLFW JKLLZ TFMWD QDQV JUTJS  
VPRDE MUVPM BPBXX USOPG IVHFC ISGPY IYKST VQUIO CAVCW AKEQQ  
EFRVM XSLQC FPFTF SPIIU ENLUW O =  
1 ABT GEN ST D H NR. 2050/38 G KDOS +

Note:

The starting positions, 01 07 09 in the case of part I, was not part of the original teleprinted message, but had been added in pencil on the received message form as an aid in the deciphering process. I have added as well the starting positions in letters, 01 07 09 corresponds to AGI.

o Decrypts:

Part I:

AUF BEFEHL DES OBERSTEN BEFEHLSHABERS SIND IM  
FALLE X Z X ZT X UNWAHRSCHEINLICHEN X FRANZOESISCHEN  
ANGRIFFS DIE WESTBEFESTIGUNGEN JEDER ZAHLENMAESSIGEN  
UEBERLEGENHEIT ZUM TROTZ ZU HALTEN X

Part II:

FUEHRUNG UND TRUPPE MUESSEN VON DIESER EHRENPFLICHT  
DURCHDRUNGEN SEIN X ABS X DEM GEMAESS BEHALTE ICH  
MIR DIE ERMAECHTIGUNG ZUR PUEFGABE DER BEFESTIGUNGEN  
ODER AUCH VON TEILEN AUSDRUECKLICH

Part III:

PERSOENLICH VOR X ABS X AENDERUNG DER ANWEISUNG  
X OKH X GEN X ST X D X H X ERSTE ABT X NR X DREI DREI  
ZWO EINS X DREI ACHT G X KDOS X VOM JULI EINS NEUN DREI ACHT  
BLEIBT VORBEHALTEN X DER OBERBEFEHLSHABER DES HEERES

o Completely assembled German message:

AUF BEFEHL DES OBERSTEN BEFEHLSHABERS SIND IM  
FALLE X Z X ZT X UNWAHRSCHEINLICHEN X FRANZOESISCHEN  
ANGRIFFS DIE WESTBEFESTIGUNGEN JEDER ZAHLENMAESSIGEN  
UEBERLEGENHEIT ZUM TROTZ ZU HALTEN X  
FUEHRUNG UND TRUPPE MUESSEN VON DIESER EHRENPFLICHT  
DURCHDRUNGEN SEIN X  
ABS X DEM GEMAESS BEHALTE ICH MIR DIE ERMAECHTIGUNG  
ZUR PUEFGABE DER BEFESTIGUNGEN ODER AUCH VON TEILEN  
AUSDRUECKLICH PERSOENLICH VOR X  
ABS X AENDERUNG DER ANWEISUNG X OKH X GEN X ST  
X D X H X ERSTE ABT X NR X DREI DREI ZWO EINS  
X DREI ACHT G X KDOS X VOM JULI EINS NEUN DREI ACHT  
BLEIBT VORBEHALTEN X



## DER OBERBEFEHLSHABER DES HEERES

o Rewritten German text:

Auf Befehl des Obersten Befehlshabers sind im Falle,  
(z.Zt =) zur Zeit unwahrscheinlichen, Franzoesischen Angriffs  
die Westbefestigungen jeder zahlenmaessigen Ueberlegenheit  
zum trotz zu halten.

Fuehrung und Truppe muessen von dieser Ehrenpflicht  
durchdrungen sein.

Dem gemaess behalte ich mir die Ermaechtigung zur Aufgabe  
der Befestigungen oder auch von Teilen ausdruecklich  
persoenlich vor.

Aenderungen der Anweisung OKH/Gen/St/D/H Erste Abt Nr. 3321/38  
G/KDos vom Juli 1938 bleibt vorbehalten.

Der Oberbefehlshaber des Heeres.

o English translation:

The Commander-in-Chief orders as follows:  
In the case of French attacks on the western fortifications,  
although unlikely at this moment, those fortifications must be held  
at all costs, even against numerically superior forces.

Commanders and troops must be imbued with the honour of this duty.

In accordance with orders, I emphasise that I alone have the right  
to authorise the fortifications to be abandoned in whole or  
part.

I reserve the right to make changes to the order OKH/Gen/St/D/H  
1. Abt. Nr. 3321/38 GKDos of July 1938.

The Commander-in-Chief of the Army.

o Comments on the translation:

I am indebted to Ralph Erskine who has verified my translation and  
proposed various improvements. The translation has been kept as close  
to the German text as possible, however it is not a literal translation.  
It has been attempted to make the translation easily understandable in  
the English language and to use British Army idioms (i.e Commander-in-  
Chief) where applicable.

The German word 'Westbefestigungen' means literally western fortifi-

cations and has been retained as such in the given translation, even if it could be interpreted to simply mean 'western front'. A major fortifications in this sector was the French Maginot Line, but the message clearly does not refer to this. It is therefore likely that it is the 'West Wall' or the Siegfried line which the message refers to. According to "The Oxford Companion to the Second World War" the construction started in 1936 and accelerated in 1938 when the Todt Organization employed 500,000 workers and consumed one-third of Germany's annual output of cement to complete it. It eventually ran for 300 miles (480 km), opposite the Maginot line.

## CRYPTO CODES

by Torbjorn Andersson

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- \* Introduction
- \* Ordered codes
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- \* Superencipherment
- \* Code charts
- \* Teletype

#### \* Introduction

Codes are a special kind of cryptosystem, closely related to substitution ciphers. Whereas in a cipher, the individual letters -or sometimes groups of letters of a fixed length- are substituted for other cryptosymbols, the codesystems operate on whole words and/or phrases, substituting these for codegroups. Usually these codegroups are of a fixed length and entirely made up of letters only, or figures only.

Codesystems require the use of codebooks, or -in the case of a very small code- codecharts, listing the cleartext words and phrases together with the allotted codegroups. Since there exists quite a few words in any language, all words can't be listed in an average codebook, so commonly there also are found codegroups representing the letters of the alphabet, syllables, numbers, punctuation marks, grammatical terms and so on, in the book.

#### \* Ordered codes

In an ordered code, the cleartext entries are listed alphabetically and the codegroups are allotted to these entries in numerical order

- in case the codegroups consists of figures - or in alphabetical order
- in case the codegroups consists of letters. A small sample part of the beginning of one such code might look something like this:

Cleartext	Codegroup	Cleartext	Codegroup
-----	-----	-----	-----

A	00001	address	00051
-ab-	00002	addressee	00052
abandon	00003	adjacent	00053
abide	00004	adjust	00054
able	00005	adjutant	00055
...	...	...	...

Both encoding and decoding are easily done with the same book, since both cleartext and codegroups follow in their normal order. Unfortunately this also greatly helps the enemy trying to break the code, so to counter this unordered codes was invented.

#### \* Unordered codes

In an unordered code, the codegroups are allotted to the cleartext in random fashion. If the code is a big one (i.e. not a small chart), one needs two books or lists. In one the cleartext is listed in alphabetic order together with the codegroups in their mixed order. In the other the codegroups are listed in order with the cleartext in mixed order. A small sample will make things clearer:

Encoding section		Decoding section	
-----		-----	
Cleartext	Codegroup	Codegroup	Cleartext
...	...	...	...
Stop	7404	3729	Strong
Stopped	4017	3730	A
Storm	2809	3731	Was
Strength	3318	3732	Does not
Strike	5056	3733	Will be
Strong	3729	3734	And
Succeed	0047	3735	Unit
Success	6395	3736	Enemy
...	...	...	...

Unordered codes can pose a difficult problem for the enemy cryptanalyst, especially if the intercepted material is small. The problem facing the legitimate users is that the codebook usually see heavy use - thus providing the enemy with a lot of traffic, since it is no small thing replacing the code with a new edition. The countermeasure to this, is to use superencipherment.

#### \* Superencipherment

Superencipherment of a code can be achieved in a number of way and service to hide the actual codegroups from the enemy cryptanalyst. The most common way to do this if the codegroups consists of figures, is to use an additive.

The additive is a - usually very long - series of figures listed as

groups in a table or book of its own. The user starts somewhere in this series, and allots a group from the additive to each group of his coded message, and adds them together (almost as in Gronsfeld's cipher) modulo 10, the sums being the cryptogram to be sent.

The receiver, which must have the same additive series and knowledge of where the sender started to pick out groups, subtracts these modulo 10 from the received cryptogram, to get the naked codetext.

Modulo 10 addition/subtraction may puzzle some of you reading this, so here is a quick explanation: When adding two single numbers, modulo 10, one simply only keep the last figure of the sum, if the sum is greater than nine, and forget everything you learned in school about carry.

When subtracting modulo 10, you automatically add 10 to the first number if the result otherwise would be negative.

(N.B. This is the practical explanation, which probably won't please the mathematicians out there, but they hardly need modulo arithmetic explained, so I hope they skip this part.)

I'll give an example of the use of the additive superencipherment method using this additive key:

```
81855 06392 93111 72993 95106 30217 25634 33084 01669 17442
95745 76799 13525 85433 66391 63054 24755 51069 06037 50362
10815 30580 71285 74122 53029 05471 80545 55717 85607 56281
```

The basic code is ordered and the text Enemy force moving east towards your sector is first coded like this:

enemy	force	move	-ing	east	towards	your	sector
25348	31800	55362	43915	25724	94039	99151	78673

Starting with the first group of the additive and proceeding from left to right when reading the rest of the groups off, and then adding them modulo 10 to the above code text will give the following result:

enemy	force	move	-ing	east	towards	your	sector
25348	31800	55362	43915	25724	94039	99151	78673
81855	06392	93111	72993	95106	30217	25634	33084
+	+	+	+	+	+	+	+
06193	37192	48473	15808	10820	24246	14785	01657

Together with the final cryptogram in the last row, it is necessary to also communicate where in the additive to start. This information is usually hidden in the cryptogram as a special group.

Another superencipherment system sometimes used, involves a substitution chart. In a German WWI-code using an ordered code with three-figure

codegroups, the first two digits of every such group was superenciphered with a 10 by 10-cells chart, called Geheimklappe ("Secret flap"). Different charts were used by different divisions, and they also changed from time to time. One such Geheimklappe looked like this:

Encoding	Decoding
0123456789	0123456789
-----	-----
0 2460735625	0 8216704913
3805858492	7260334996
1 2735270460	1 4298766934
0739102038	8014685731
2 1406447724	2 1120578540
1919719422	0480210698
3 3731730586	3 3531709773
2698509105	5402553792
4 6148057612	4 1224689202
1931663208	7592665411
5 8528382955	5 5306854501
5048147057	1793285963
6 0995614818	6 0441038862
3163864957	2078798943
7 9270931393	7 1784233102
7514544738	5216741146
8 2759184066	8 3498559656
6242335067	8365500937
9 8193948190	9 5687976799
6286962747	7138842024

When encrypting, the first figure of a codegroup is used as a row-index to the leftmost table, and the second is used as a column-index. These two figures are substituted for the ones found at the intersection in the encoding table, and the third figure of the original codegroup is appended as it is. To decode a received codegroup, one uses the rightmost table in the same way, since it is the inverse of the encoding table.

The codegroup 153 meaning *Gegner geht zur ck* (=Enemy is retreating) will be superenciphered as 703 using the above keychart.

A similar superencipherment system was used by the Soviet Baltic Navy during World War II. The Soviet codegroups were four figures long and these were split up into pairs and then superenciphered with a chart and recombined into four-figure groups prior to transmission. The Soviet Baltic Navy four-figure-code was successfully attacked and read by the Swedish signal intelligence organization during WWII, probably due to the fact that the basic codebook was ordered and saw heavy use.

### \* Code charts

In military situations small code charts are often used as low-level tactical cryptosystem, e.g. complete words are substituted by codes, or if the vocabulary that has to be used is too large, a syllabary square can be used. There are - of course - many possible constructions, but one sometimes found in cryptographic literature looks like this:

	1	2	3	4	5	6	7	8	9	0
-----										
1	A	1	AL	AN	AND	AR	ARE	AS	AT	ATE
2	ATI	B	2	BE	C	3	CA	CE	CO	COM
3	D	4	DA	DE	E	5	EA	ED	EN	ENT
4	ER	ERE	ERS	ES	EST	F	6	G	7	H
5	8	HAS	HE	I	9	IN	ING	ION	IS	IT
6	IVE	J	0	K	L	LA	LE	M	ME	N
7	ND	NE	NT	O	OF	ON	OR	OU	P	Q
8	R	RA	RE	RED	RES	RI	RO	S	SE	SH
9	ST	STO	T	TE	TED	TER	TH	THE	THI	THR
0	TI	TO	U	V	VE	W	WE	X	Y	Z

Normally, a two-figure system will double the length of the text (since two figures have to be used to encrypt every individual letter of the plaintext), but in a syllabary system - if it is carefully constructed, like the above one - the resulting cryptogram is in most cases shorter. In the above chart clusters of up to three letters will be encrypted by single two-figure codegroups, and if we encrypt the sample text 'Train with ammunition has arrived', it will look like this:

t	r	i	w	i	h	a	m	m	u	n	i	io	has	ar	ri	ve	d
a	n		t								t	n					
9	8	5	0	5	4	1	6	6	0	6	5	58	52	16	86	05	31
3	2	6	6	0	0	1	8	8	3	0	0						

### \* Teletype

Growing use of the telegraph caused several automatic transmission systems to be invented in the late 19th century. One such system was invented by the Frenchman E. Baudot in 1874. His system - still in use today - uses two radio frequencies when operating on shortwave to represent two elements, usually called zero and one nowadays, which, when combined into groups of five, gives 32 combinations which are used in the following way to represent letters, figures, punctuation and control codes:

combination	letter	figure
11000	A	-
10011	B	?
01110	C	:

10010	D	who are you?
10000	E	3
10110	F	è (national use)
01011	G	é (national use)
00101	H	ô (national use)
01100	I	8
11010	J	bell
11110	K	(
01001	L	)
00111	M	.
00110	N	,
00011	O	9
01101	P	0
11101	Q	1
01010	R	4
10100	S	'
00001	T	5
11100	U	7
01111	V	=
11001	W	2
10111	X	/
10101	Y	6
10001	Z	+
00010	carriage return	
01000	line feed	
11111	letter shift	
11011	figure shift	
00100	space	
00000	unperforated tape	

Since 32 combinations isn't enough to represent both letters and figures, two shifts are used. When switching between these shifts the combinations letter shift and figure shift are used. (The combinations F, G and H on the figure shift are not used in international traffic, but are reserved for national use. The letters given above show how these combinations are used for national Swedish teletype traffic.)

#### \* Teletype cryptosystems

The zeros and ones of the teletype code lends themselves well to encryption and several systems for encrypting teletype traffic have been invented. A few will be described below.

#### \* U.S. WWI system

During WWI, heavy military traffic between France and the U.S. caused the American Signal Corps to conduct a series of experiments aimed at automatically encrypting teletype transmissions since it was feared that the enemy might be in a position to intercept messages passing through the trans-Atlantic cables. Together with engineers from the

American Telephone and Telegraph Company a machine was constructed, which was able to automatically encrypt or decrypt the 32 teletype symbols. The machine used two loops of tape containing arbitrary teletype symbols as key. One keytape contained 999 symbols, and the other 1000. For every teletype symbol to be encrypted, the two keytapes stepped forward one step. At two reading positions - one for each keytape - the five bits of the current baudotsymbols of each tape were combined to form a new symbol of five bits in the following way:

Two of the same symbols, two zeros or two ones, combined to yield a one; whereas, two different symbols, a one and a zero, combined to yield a zero. Thus, if the first keytape had the baudotsymbol representing the letter A, and the second keytape had the symbol representing Z, these would combine like this:

```
tape 1 - "A":  1 1 0 0 0
tape 2 - "Z":  1 0 0 0 1
-----
new      "F":  1 0 1 1 0
```

The new symbol - F, in this case - were likewise combined with the symbol representing the cleartext - or cryptotext, since the operation is reciprocal - to form the cryptosymbol.

Originally, the AT&T engineers wanted to use only one keytape, which should be destroyed as it was used. This system is known today as a one-time-tape (more commonly: one-time-pad) and is absolutely impossible in theory to break when used correctly. The military saw the immense logistic problem of manufacturing and distributing such tapes, and therefore the less secure method using two keytape loops came to be the one used.

\*\*\*\*\*

Numbers + Oddities Logs column # 04, July 1998

Jascha Ruesseler

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\*\*\*\*\*

Hi, folks, welcome to the logs. Our log format is as follows:

FREQ c/s Station Enigma-Code Time date Mode baud Remarks (Initials)

Example:

10426 Lincolnshire Poacher E3 1540 13/april USB ongoing msg (JRU)

I will make the log-format a little more like freestyle: please put the freq and the stn name at the beginning, the rest is up to you. But it is nice if you use the format described above. In this column I include logs posted to the spooks or wun mailing lists or to Ary or myself privately.



For a reference of the enigma designators see n+o newsletter no.1. If you want to remain anonymous, just send your logs to me or Ary with a note saying so.

\* MORSE STATIONS \*

3410 M17, Mon 13/7/98, 2030, 66829 30 (GD2)  
3410 M17, Weds 15/7/98, 1900, 70789 24 (GD2)  
3410 M17, Thurs 16/7/98, 2030, 66440 25 (GD2)  
3410 M17, Weds 8/7/98, 1910, 70279 27 = (GD2)  
3410 M17, Thurs 9/7/98, 2030, 66829 30 = = (GD2)  
3410 M17, Weds 1/7/98, 1900, 70579 22 (GD2)  
3410 M17, Thurs 2/7/98, 2030, 66338 22 (GD2)  
3824 M10, Sun 12/7/98, 2000, 111x3 28730x3 30x3 (GD2)  
3824 M10, Sun 5/7/98, 2000, 111x3 44843x3 30x3 (GD2)  
3824 M10, Sat 11/7/98, 2000, 111x3 71973x3 30x3 (GD2)  
3824 M10, Sun 28/6/98, 2000, 111x3 66235x3 30x3 (GD2)  
4485 M10, Sun 5/7/98, 1645, Repeat of Saturday (GD2)  
4485 M51, Tues 30/6/98, 0800, NR 63 Until 0845 (GD2)  
4485 M10, Sat 4/7/98, 1645, Very weak U/R (GD2)  
4760 M14, Frid 17/7/98, 1900, 560 R4 448 448 71 71 = =  
M14 Frid 17/7/98 # 139 139 72 72 = = Sent a second message (GD2)  
4903 M1, Tues 14/7/98, 2000, 025 R4 391 391 42 42 (GD2)  
4903 M1, Thurs 16/7/98, 2000, 025 R4 717 717 44 44 = = (GD2)  
4905 M1, Tues 30/6/98, 2000, 025 R4 214 37 (GD2)  
4905 M1, Thurs 2/7/98, 2000, 025 R4 908 40 (GD2)  
5028 M10, Sun 12/7/98, 1645, Repeat of Sat 11/7 (GD2)  
5028 M10, Mon 13/7/98, 1645, Repeat of Sunday (GD2)  
5028 M10, Mon 13/7/98, 2100, 555x3 783x3 41 961x3 42 (GD2)  
5028 M10, Weds 15/7/98, 2100, Repeat of Monday (GD2)  
5028 M10, Sat 18/7/98, 1645, 555x3 571x3 50 275x3 50 049x3 46  
435x3 28 M10 this Saturday has much longer messages (GD2)  
5028 M10, Mon 6/7/98, 1645, Repeat of Sunday 1645 (GD2)  
5028 M10, Mon 6/7/98, 2100, 555x3 783x3 49 961x3 16 (GD2)  
5028 M10, Weds 8/7/98, 1645, Repeat of Monday (GD2)  
5028 M10, Weds 8/7/98, 2100, Repeat of Tuesday (GD2)  
5028 M10, Sat 11/7/98, 1645, 555x3 571x3 29 275x3 27 049x3 18  
435x3 30 (GD2)  
5028 M10, Sun 28/6/98, 1645, Repeat of Saturday (GD2)  
5028 M10, Mon 29/6/98, 1645, Repeat of Sunday (GD2)  
5028 M10, Mon 29/6/98, 2100, 555x3 783x3 19 961x3 29 (GD2)  
5028 M10, Weds 1/7/98, 1645, Repeat of Monday (GD2)  
5050 M3, Frid 10/7/98, 0900, 012/00 (GD2)  
5074 M45, Thurs 16/7/98, 1702, Repeat of Tuesday (GD2)  
5080 M3, Mon 29/6/98, 0700, 040/00 (GD2)  
5090 M3, Mon 13/7/98, 0700, 040/00 (GD2)  
5120 M3, Tues 7/7/98, 0730, 041/00 (GD2)  
5120 M3, Tues 30/6/98, 0730, 041/00 (GD2)  
5180 M3, Mon 13/7/98, 0730, 018/00 (GD2)

5180 M3, Mon 13/7/98, 0830, 044/00 (GD2)  
 5180 M3, Mon 13/7/98, 0930, 011/00 Same as 1997 (GD2)  
 5180 M3, Weds 15/7/98, 1030, 047/00 (GD2)  
 5180 M3, Mon 6/7/98, 0730, 014/56 R10 (GD2)  
 5180 M3, Mon 6/7/98, 0830, 046/52 (GD2)  
 5180 M3, Tues 7/7/98, 1400, 044/00 (GD2)  
 5180 M3, Weds 8/7/98, 1030, 047/00 (GD2)  
 5180 M3, Thurs 9/7/98, 0730, 018/00 (GD2)  
 5180 M3, Mon 29/6/98, 0730, 018/00 (GD2)  
 5180 M3, Mon 29/6/98, 0830, 044/00 (GD2)  
 5220 M1B, Mon 13/7/98, 1718, 719 R4 437 437 47 47 (GD2)  
 5220 M1B, Weds 15/7/98, 1718, 719 R4 974 974 46 46 = = (GD2)  
 5220 M1B, Mon 6/7/98, 1718, 719 R4 437 437 47 47 (GD2)  
 5220 M1B, Weds 8/7/98, 1718, 719 R4 437 437 47 47 (GD2)  
 5220 M1B, Mon 29/6/98, 1718, 719 R4 437 47 (GD2)  
 5220 M1B, Weds 1/7/98, 1718, 719 R4 437 47 (GD2)  
 5248 M14, Frid 3/7/98, 1800, 491x3 00000 // 5254 (GD2)  
 5278 M1, Tues 14/7/98, 1800, 025 R4 210 210 44 44 (GD2)  
 5278 M1, Thurs 16/7/98, 1800, 025 R4 261 261 41 41 = = (GD2)  
 5278 M1, Tues 7/7/98, 1800, 025 R4 541 541 38 38 (GD2)  
 5278 M1, Tues 30/6/98, 1800, 025 R4 178 35 (GD2)  
 5278 M1, Thurs 2/7/98, 1800, 025 R4 102 40 (GD2)  
 5287 M1, Thurs 9/7/98, 1800, 025 R4 284 284 40 40 = = (GD2)  
 5301 M10, Sun 5/7/98, 1610, Call missed ???x3 42 859x3 20 (GD2)  
 5301 M10, Mon 6/7/98, 1610, 555x3 107x3 42 859x3 20 (GD2)  
 5350 M1B, Sat 18/7/98, 1605, 053 R4 117 117 42 42 = = (GD2)  
 5350 M1B, Sat 11/7/98, 1605, 053 R4 117 117 42 42 = =  
 Both M1 and M1B Very poor signals today (GD2)  
 5350 M1B, Sat 4/7/98, 1605, 053 R4 117 42 (GD2)  
 5360 M3, Weds 15/7/98, 0830, 044/00 (GD2)  
 5360 M3, Weds 8/7/98, 0830, 046/52 (GD2)  
 5360 M3, Weds 1/7/98, 0830, 044/00 (GD2)  
 5365 M3, Weds 1/7/98, 1500, 046/00 at 1997 041/54 (GD2)  
 5365 M3, Frid 3/7/98, 0800, 041/00 (GD2)  
 5428 M12, Weds 15/7/98, 1900, 941x3 000 (GD2)  
 5428 M12, Sun 5/7/98, 1900, 941 941 941 000 (GD2)  
 5466 M13, Mon 6/7/98, 2100, 378 R5 = 201 19 = (GD2)  
 5473 M1B, Weds 15/7/98, 1510, 745 R4 632 632 40 40 = = (GD2)  
 5473 M1B, Sat 18/7/98, 1510, 745 R4 632 632 40 40 = = (GD2)  
 5473 M1B, Weds 8/7/98, 1510, 745 R4 529 529 48 48 (GD2)  
 5473 M1B, Weds 1/7/98, 1510, 745 R4 529 48 (GD2)  
 5474 M45, Tues 14/7/98, 1702, 074 R4 736 44 736 44 (GD2)  
 5474 M45, Tues 7/7/98, 1702, 074 R4 736 736 44 44 (GD2)  
 5474 M45, Thurs 9/7/98, 1702, 074 R4 736 736 44 44 = = (GD2)  
 5474 M45, Tues 30/6/98, 1702, 074 R4 736 44 (GD2)  
 5474 M45, Thurs 2/7/98, 1702, Repeat of Tuesday (GD2)  
 5520 M3, Tues 14/7/98, 0630, 047/50 (GD2)  
 5520 M3, Thurs 16/7/98, 0630, 047/50 Repeat of Tuesday (GD2)

5520 M3, Thurs 16/7/98, 0800, 017/00 (GD2)  
5520 M3, Thurs 16/7/98, 0900, 011/00 (GD2)  
5520 M3, Frid 17/7/98, 0730, 040/00 (GD2)  
5520 M3, Tues 7/7/98, 0630, 047/57 (GD2)  
5520 M3, Thurs 9/7/98, 0630, 047/57 Repeat of Tues (GD2)  
5520 M3, Thurs 9/7/98, 0800, 017/00 (GD2)  
5520 M3, Thurs 9/7/98, 0900, 013/50 (GD2)  
5520 M3, Frid 10/7/98, 0730, 040/00 (GD2)  
5520 M3, Tues 30/6/98, 0630, 042/00 (GD2)  
5520 M3, Weds 1/7/98, 1200, 016/00 (GD2)  
5520 M3, Thurs 2/7/98, 0630, 042/00 (GD2)  
5520 M3, Thurs 2/7/98, 0800, 013/52 (GD2)  
5520 M8, Thurs 2/7/98, 0900, 011/00 (GD2)  
5520 M3, Frid 3/7/98, 0730, 040/00 (GD2)  
5550 M3, Tues 14/7/98, 0730, 010/52 (GD2)  
5550 M3, Thurs 16/7/98, 0830, 010/52 Repeat of Tuesday (GD2)  
5550 M3, Thurs 9/7/98, 0830, 012/51 Repeat of Tuesday (GD2)  
5550 M3, Tues 30/6/98, 0830, 019/00 (GD2)  
5550 M3, Thurs 2/7/98, 0830, 019/00 (GD2)  
5609 M29, Sun 5/7/98, 1900, Repeat of 17000 (GD2)  
5625 M3, Frid 10/7/98, 0830, 017/00 (GD2)  
5625 M3, Frid 3/7/98, 0830, 013/00 (GD2)  
5670 M3, Weds 15/7/98, 0930, 012/00 (GD2)  
5670 M3, Weds 8/7/98, 0930, 012/00 (GD2)  
5670 M3, Weds 1/7/98, 0930, 015/58 (GD2)  
5670 M3, Weds 1/7/98, 0957, VVV = = 000 (GD2)  
5705 M10, Mon 13/7/98, 1000, 111x3 19263 17 3 other IDs ??? (GD2)  
5705 M10, Frid 17/7/98, 1000, 111x3 45347/16 55987/18 51553/15  
68807/17 (GD2)  
5705 M10, Sat 18/7/98, 1000, 111x3 97255/18 64935/15 36376/17  
????/18 (GD2)  
5705 M10, Mon 6/7/98, 1000, On but U/R (GD2)  
5705 M10, Tues 7/7/98, 1000, 111x3 16606x3 15x3 55530x3 19x35180 (GD2)  
5705 M10, Thurs 9/7/98, 1000, 111x3 06975x3 15x3 37112 18 47025 ?? (GD2)  
5705 M10, Frid 10/7/98, 1000, 111x3 81518 16 37047 19 51793 15 (GD2)  
5705 M10, Sat 11/7/98, 1000, Just detectable (GD2)  
5705 M10, Sun 28/6/98, 1000, 111x3 28230x3 15x3 ?????x3 ??x3  
26403x3 (GD2)  
5705 M10, Tues 30/6/98, 1000, On but too weak to read (GD2)  
5705 M10, Thurs 2/7/98, 1000, Call Missed ?????/87/18 (GD2)  
5737 M1B, Thurs 16/7/98, 2032, 931 R4 682 682 65 65 = = (GD2)  
5737 M1B, Thurs 9/7/98, 2032, 931 R2 Rest U/R.  
Transmission became broken after 2 minutes (GD2)  
5737 M1B, Thurs 2/7/98, 2032, 931 331 40 (GD2)  
5748 M4, Thurs 16/7/98, 1257, Repeat of Wednesday.  
Also on 0957/7250 1157/8188 (GD2)  
5750 M1B, Frid 17/7/98, 2103, 871 R4 682 682 65 65 = = (GD2)  
5750 M1B, Frid 10/7/98, 2102, 871 R4. 682 682 65 65 = = (GD2)

5750 M1B, Frid 3/7/98, 2102, 871 R4 331 40 (GD2)  
 5777 M1b, Sat 11/7/98, 1855, 127 R4 Rest U/R (GD2)  
 5811 M1B, Mon 13/7/98, 2010, 729 R4 682 682 65 65 (GD2)  
 5812 M1B, Mon 6/7/98, 2010, 729 R4 331 331 40 40 (GD2)  
 5812 M1B, Mon 29/6/98, 2010, 729 R4 331 40 (GD2)  
 5860 M10, Mon 13/7/98, 1500, 555x3 966x3 17 (GD2)  
 5865 M17, Weds 8/7/98, 1600, On but U/R 1620 on 4740 1640 on 4270 (GD2)  
 5865 M17, Weds 1/7/98, 1600, 53588. Repeat of 0800 (GD2)  
 5874 M13, Sun 5/7/98, 2030, 411 R5 = 191 21 = (GD2)  
 6283 M1B, Tues 14/7/98, 1723, 382 R4 214 214 44 44 (GD2)  
 6283 M1B, Thurs 16/7/98, 1723, 382 R4 214 214 44 44 = = (GD2)  
 6283 M1B, Tues 7/7/98, 1723, 382 R4 543 543 48 48 (GD2)  
 6283 M1B, Thurs 9/7/98, 1723, 382 R4 543 543 48 48 = =  
 Transmission became broken at the end (GD2)  
 6283 M1B, Tues 30/6/98, 1725, 382 R1 543 48 (GD2)  
 6283 M1B, Thurs 2/7/98, 1723, 382 R4 543 48 (GD2)  
 6330 M3, Mon 6/7/98, 0900, 976/00 (GD2)  
 6330 M3, Weds 8/7/98, 0900, 214/00 Same as 1997 (GD2)  
 6330 M3, Mon 29/6/98, 0900, 976/00 (GD2)  
 6330 M3, Weds 1/7/98, 0900, 214/00 (GD2)  
 6430 M3, Frid 17/7/98, 0930, 552/00 (GD2)  
 6430 M3, Frid 10/7/98, 0930, 552/00 (GD2)  
 6433 M1, Sat 11/7/98, 1500, 025 R4 053 053 32 32 = = (GD2)  
 6434 M1, Sat 4/7/98, 1500, 025 R4 721 41 (GD2)  
 6437 M1, Sat 18/7/98, 1500, 085 Corrected 025 R4 458 458 42 42 = = (GD2)  
 6469 M29, Mon 29/6/98, 1900, Repeat of 1700 (GD2)  
 6509 M29, Weds 1/7/98, 1900, Repeat of 1800. New frequency.  
 Repeats rest of week on same frequency (GD2)  
 6529 M29, Mon 29/6/98, 1700, Usual Call. New Message (GD2)  
 6545 M13, Weds 1/7/98, 2100, 254 R5 = 176 20 = (GD2)  
 6659 M29, Mon 13/7/98, 1700, Usual Call New mssge 14 Groups (GD2)  
 6659 M29, Mon 6/7/98, 1700, Usual Call. New message 13x5F.  
 Repeats same message same time rest of week 1900 on 6509 (GD2)  
 6660 M29, Weds 1/7/98, 1700, New frequency.  
 Repeats rest of week on same frequency (GD2)  
 6675 M17, Tues 14/7/98, 1900, 58182 24 (GD2)  
 6675 M17, Tues 7/7/98, 1900, 58372 35 35 = = 1920 on 6290  
 1940 on 5235 (GD2)  
 6780 M1, Sun 12/7/98, 0700, 025 R4 465 465 40 40 = = (GD2)  
 6780 M1, Sun 5/7/98, 0700, 025 R4 283 283 44 44 (GD2)  
 6780 M7, Tues 7/7/98, 1650, Call Missed Ended 22 22 30 30 (GD2)  
 6780 M1, Sun 28/6/98, 0700, 025 R4 128 42 (GD2)  
 6782 M12, Sun 12/7/98, 1600, 749x3 000 (GD2)  
 6782 M12, Weds 15/7/98, 1600, 749x3 1 4796 145 (GD2)  
 6782 M12, Thurs 16/7/98, 1600, 749x3 000 (GD2)  
 6782 M12, Sat 18/7/98, 1600, 749x3 000 (GD2)  
 6782 M12, Sun 5/7/98, 1600, 749 749 749 000 (GD2)  
 6782 M12, Mon 6/7/98, 1600, 749 749 749 1 4039 145 4039 145 (GD2)

6782 M12, Tues 7/7/98, 1600, 749x3 1 4278 146 (GD2)  
6782 M12, Weds 8/7/98, 1600, 749 749 749 1 2439 145 2439 145 (GD2)  
6782 M12, Thurs 9/7/98, 1600, 749x3 000 (GD2)  
6782 M12, Frid 10/7/98, 1600, 749x3 000 (GD2)  
6782 M12, Sat 11/7/98, 1600, 749x3 000 (GD2)  
6782 M12, Sun 28/6/98, 1600, 749x3 000 (GD2)  
6782 M12, Weds 1/7/98, 1600, 749x3 1 1598 142 (GD2)  
6787 M8, Mon 13/7/98, 0700, 80591 25492 54212 (GD2)  
6787 M8, Thurs 16/7/98, 0800, 44141 65382 42052 (GD2)  
6787 M8, Sat 18/7/98, 0700, 44143 43291 10561 (GD2)  
6787 M8, Thurs 9/7/98, 0800, 86893 11341 92601 (GD2)  
6787 M8, Sat 11/7/98, 0700, 38772 11343 92603 (GD2)  
6787 M8, Mon 29/6/98, 0700, 39293 45033 45163 (GD2)  
6787 M8, Mon 29/6/98, 0800, 03373 90742 23232 (GD2)  
6797 M8, Tues 14/7/98, 0700, 80592 25491 54213 (GD2)  
6797 M8, Frid 17/7/98, 0700, 44142 65383 42053 (GD2)  
6797 M8, Tues 7/7/98, 0700, 86891 10562 13052 (GD2)  
6797 M8, Frid 10/7/98, 0700, 38771 11342 92602 (GD2)  
6797 M8, Sun 28/6/98, 0800, 39292 45032 45162 (GD2)  
6797 M8, Tues 30/6/98, 0700, 73991 22861 32541 (GD2)  
6823 M1B, Thurs 16/7/98, 1504, 168 R3 574 574 46 46 = = (GD2)  
6823 M1B, Thurs 9/7/98, 1503, 168 R4 574 574 46 46 = = (GD2)  
6823 M1B, Thurs 2/7/98, 1503, 168 R4 574 46 (GD2)  
6825 M8, Tues 14/7/98, 0800, 31433 49162 07842 (GD2)  
6825 M8, Weds 15/7/98, 0800, Repeat of Above (GD2)  
6825 M8, Sun 5/7/98, 0800, 63872 22513 61373 (GD2)  
6825 M8, Tues 7/7/98, 0800, 92403 09381 27141 (GD2)  
6825 M8, Weds 1/7/98, 0800, Repeat of 0700 (GD2)  
6854 M8, Thurs 16/7/98, 0800, 47292 72791 56501 (GD2)  
6854 M8, Thurs 2/7/98, 0800, 52131 64572 08002 (GD2)  
6855 M12, Mon 13/7/98, 1800, 658x3 1 2469 148 2469 148 (GD2)  
6855 M12, Tues 14/7/98, 1800, 658x3 1 1876 143 1876 143 (GD2)  
6855 M12, Mon 6/7/98, 1800, 658 658 658 1 4039 145 4039 145 (GD2)  
6855 M12, Tues 7/7/98, 1800, 658 658 658 1 4278 146 4278 146 (GD2)  
6855 M12, Mon 29/6/98, 1800, 658x3 1 2557 143 (GD2)  
6855 M12, Tues 30/6/98, 1800, 658x3 1 2936 142 (GD2)  
6860 M??, Thurs 16/7/98, 2000, 631 01110 This was repeated until  
2017.Short zero. Ended after 63 (GD2)  
6933 M8, Sat 18/7/98, 0800, Repeat of 0700 (GD2)  
6934 M12, Weds 15/7/98, 2000, 658x3 1 4796 145 (GD2)  
6934 M12, Sat 18/7/98, 2000, 658x3 1 1695 142 1695 142 (GD2)  
6934 M8, Sat 11/7/98, 0800, ????? 11343 92603 (GD2)  
6947 M10, Tues 14/7/98, 1500, 555x3 966x3 17 (GD2)  
6983 M51, Mon 29/6/98, 0700, Nr 16 to NR 28 (GD2)  
6985 M8, Weds 15/7/98, 0700, 80593 65381 40251 (GD2)  
6985 M8, Weds 8/7/98, 0700, 86892 10653 10353 (GD2)  
6985 M8, Weds 1/7/98, 0700, 73922 22862 32542 (GD2)  
6999 M23, Frid 17/7/98, 1000, 00000 R4 = 27 27 = (GD2)

6999 M23, Mon 6/7/98, 1000, 33 R7 = 52 52 = (GD2)  
6999 M23, Tues 7/7/98, 1000, 44 R8 = 51 51 = (GD2)  
6999 M23, Weds 8/7/98, 1000, 11 R8 = 52 52 = (GD2)  
7250 M4, Mon 13/7/98, 0957, U R3 L0 L0x3/44262  
Same Message repeated 1157/8188 1257/5148 (GD2)  
7250 M4, Weds 15/7/98, 0957, U R3 L0 L0x3/44262 (GD2)  
7256 M3, Sun 12/7/98, 1630, 287/00 (GD2)  
7256 M3, Mon 13/7/98, 1630, 287/00 (GD2)  
7256 M3, Tues 14/7/98, 1630, 287/00 (GD2)  
7256 M3, Frid 17/7/98, 1630, 287/00 (GD2)  
7256 M3, Sat 18/7/98, 1630, 287/00 (GD2)  
7256 M3, Sun 5/7/98, 1630, 287/00 (GD2)  
7256 M3, Mon 6/7/98, 1630, 287/00 (GD2)  
7256 M3, Tues 7/7/98, 1630, 287/00 (GD2)  
7256 M3, Weds 8/7/98, 1630, 287/00 (GD2)  
7256 M3, Thurs 9/7/98, 1630, 287/00 (GD2)  
7256 M3, Frid 10/7/98, 1630, 287/00 (GD2)  
7256 M3, Sat 11/7/98, 1630, 287/00 (GD2)  
7256 M3, Sun 28/6/98, 1630, 287/00 (GD2)  
7256 M3, Weds 1/7/98, 1630, 287/00 (GD2)  
7256 M3, Thurs 2/7/98, 1630, 287/00 (GD2)  
7256 M3, Frid 3/7/98, 1630, 287/00 (GD2)  
7256 M3, Sat 4/7/98, 1630, 287/00 (GD2)  
7425 M17, Weds 8/7/98, 0800, 53983. Rest U/R (GD2)  
7425 M17, Weds 1/7/98, 0800, 53588 48 (GD2)  
7505 M10, Sun 5/7/98, 1000, 111x3 7????x3 ??x3 79077x3 15x3 (GD2)  
7580 M8, Thurs 16/7/98, 0900, 47292 72791 56501 (GD2)  
7580 M8, Sun 28/6/98, 0800, 03372 90741 23231 (GD2)  
7649 M3, Tues 14/7/98, 1200, 741/00 Same as 1997 (GD2)  
7680 M8, Sat 11/7/98, 0800, 69563 03282 06282 (GD2)  
7725 M17, Weds 15/7/98, 0800, 53463 28 ? (GD2)  
7725 M17, Tues 30/6/98, 1900, Nil Heard (GD2)  
7795 M23, Mon 13/7/98, 1500, 480 R5 = 129 129 =  
Repeat of message sent 27/4 4/5 11/5 18/5 29/6 (GD2)  
7795 M23, Tues 14/7/98, 1500, 486 R4 = 54 54 = (GD2)  
7795 M23, Weds 15/7/98, 1500, 484 R5 = 63 63 = (GD2)  
7795 M23, Thurs 16/7/98, 1500, 246 R4 = 57 57 =  
Repeat of message sent on 30/4 7/14/21/28/5 11/22/6 9/7 (GD2)  
7795 M23, Frid 17/7/98, 1500, 664 R3 = 60 60 = (GD2)  
7795 M23, Mon 6/7/98, 1500, 480 R5 = 129 129 = (GD2)  
7795 M23, Weds 8/7/98, 1500, 484 R5 = 63 63 =  
Repeat from 29/4 6/5 13/5 20/5 27/5 3/6 10/6 (GD2)  
7795 M23, Thurs 9/7/98, 1500, 246 R4 = 57 57 =  
Repeat from 30/4 7/5 14/5 21/5 28/5 11/6 22/6 (GD2)  
7795 M23, Frid 10/7/98, 1500, 664 R2 = 60 60 = (GD2)  
7795 M23, Mon 29/6/98, 1500, 480 R4 = 129 129 = (GD2)  
7795 M23, Mon 29/6/98, 1500, 480 R4 = 129 129 = (GD2)  
7795 M23, Tues 30/6/98, 1500, 486 R4 = 54 54 = (GD2)

7795 M23, Weds 1/7/98, 1500, 484 R4 = 63 63 = (GD2)  
7834 M13, Sun 12/7/98, 1900, 417 R5 = 166 20 = (GD2)  
7834 M13, Mon 13/7/98, 1900, 417 R5 = 166 20 = (GD2)  
7845 M10, Thurs 16/7/98, 1810, 555x3 661x3 46 423x3 11 (GD2)  
7940 M52, Mon 29/6/98, 2000, 55 R12 (GD2)  
7940 M52, Weds 1/7/98, 1800, 14 : 824393x3 : 26 AR (GD2)  
7940 M52, Thurs 2/7/98, 1445, 17:317056x3:38 AR (GD2)  
7940 M52, Thurs 2/7/98, 1730, 55 R5 17:984821x3 AR (GD2)  
8055 M12, Weds 15/7/98, 1700, 135x3 1 4796 145 Note that the 3  
M12s sent the same message to 3 IDs (GD2)  
8055 M12, Weds 8/7/98, 1700, 135 135 135 1 2439 145 2439 145  
Same message as sent at 1600 on 6782 to 749 (GD2)  
8153 M13, Frid 3/7/98, 2000, 284 R3 = 164 25 = (GD2)  
8173 M12, Mon 13/7/98, 1640, 749x3 1 2469 148 2469 148 (GD2)  
8175 M13, Mon 29/6/98, 1900, 417 R5 = 165 22 = (GD2)  
8188 M4, Weds 15/7/98, 1157, Repeat of 0957 1257/5678 (GD2)  
8191 M10, Sun 12/7/98, 1810, 555x3 661x3 31 423x3 45.  
Repeat of Sat 0710 (GD2)  
8191 M10, Sat 18/7/98, 0710, 555x3 661x3 36 423x3 11 (GD2)  
8191 M10, Sun 5/7/98, 1810, 555x3 661x3 21 423x3 46 (GD2)  
8191 M10, Thurs 9/7/98, 1810, 555x3 661x3 31 423x3 45 (GD2)  
8191 M10, Sat 11/7/98, 0710, Rpt of Thursday 1810 (GD2)  
8191 M10, Sun 28/6/98, 1810, 555x3 661x3 46 425x3 13 (GD2)  
8191 M10, Thurs 2/7/98, 1810, 555x3 661x3 23 423x3 46 (GD2)  
8191 M10, Sat 4/7/98, 0710, 555x3 661x3 23 423x3 46 (GD2)  
8231 M53, Tues 14/7/98, 2000, 747.738 HR 18 HR 18 (GD2)  
8231 M53, Weds 15/7/98, 2000, 747.738 Repeat of Tues (GD2)  
8231 M53, Frid 17/7/98, 2000, On but U/R (GD2)  
8231 M53, Sat 18/7/98, 2000, 747.571 Rest U/R (GD2)  
8231 M53, Sun 5/7/98, 2000, 747.296.665 HR 27 HR?? (GD2)  
8231 M53, Frid 10/7/98, 2000, Just detectable (GD2)  
8231 M53, Sat 11/7/98, 2000, 747.381 HR 62 (GD2)  
8231 M53, Tues 30/6/98, 2000, 747.?3?? (GD2)  
8231 M53, Weds 1/7/98, 2000, 747.320 (GD2)  
8231 M53, Thurs 2/7/98, 2000, On but U/R (GD2)  
8231 M53, Frid 3/7/98, 2000, 747.877 HR 31 (GD2)  
8231 M53, Sat 4/7/98, 2000, 747.665.296 HR32 HR27.  
One of the rare double messages. Unusual strong signal (GD2)  
8307 M23, Mon 13/7/98, 0800, 579 R10 // 9285  
Repeats same for rest of week (GD2)  
8307 M23, Mon 13/7/98, 1400, 579 R10 // 9285 (GD2)  
8307 M23, Sun 5/7/98, 0800, 579 R10//9285.  
Repeated each day for rest of week (GD2)  
8307 M23, Sun 5/7/98, 1400, 579 R10 // 9285.  
Repeated each day rest of week (GD2)  
8307 M23, Sun 28/6/98, 0800, 579 R10 // 9285.  
Repeats rest of week on same frequency (GD2)  
8307 M23, Sun 28/6/98, 1400, 579 R10 // 9285.

Repeats rest of week on same frequency (GD2)

9260 M24, Thurs 9/7/98, 1920, 572 R4 469 469 138 138 = = (GD2)

9272 M3, Sat 18/7/98, 0800, 624/00 (GD2)

9272 M3, Sat 11/7/98, 0800, 624/00 (GD2)

9272 M3, Sat 4/7/98, 0800, 624/00 (GD2)

9441 XPH Polytone station, 06.00 (July 10) TONES Long message,  
ca 5 mins. Very loud signal (AB)

9950 M3, Tues 14/7/98, 1300, 183/00 (GD2)

9951 M24, Weds 1/7/98, 0700, 972 R4 605 187 (GD2)

9952 M24, Weds 8/7/98, 0700, 972 R4 348 348 117 117 (GD2)

9953 M24, Weds 15/7/98, 0700, 972 R4 864 864 93 93 = = (GD2)

10167 M12, Sun 12/7/98, 1920, Repeat of 1900 (GD2)

10270 M3, Tues 7/7/98, 0900, 503/00 (GD2)

10270 M3, Tues 30/6/98, 0900, 503/00 (GD2)

10721 M14, Sun 28/6/98, 0800, 591 R4 267 57 (GD2)

10921 M10, Sun 12/7/98, 1920, 555x3 481/20 988/46 M10 IDs  
abbreviated each sent 3 times (GD2)

10921 M10, Mon 13/7/98, 1920, 555x3 481x3 20 988x3 46.  
Repeat of Sunday (GD2)

10921 M10, Sun 5/7/98, 1920, 555x3 481x3 21 988x3 20 (GD2)

10921 M10, Sun 28/6/98, 1920, 555x3 481x3 18 988x3 30 (GD2)

11041 XPH, Weds 1/7/98, 0620, 0640/12141 (GD2)

11041 XPH Polytone station, 06.20 (July 10) TONES Long message,  
ca 5 mins. Very loud signal (AB)

11416 M10, Thurs 2/7/98, 1100, 555x3 866x3 48 844x3 14 (GD2)

11567 M12, Sun 12/7/98, 1900, Repeat of 1840 (GD2)

12132 M12, Frid 17/7/98, 1600, 963x3 1 379 48 379 48 (GD2)

12132 M12, Weds 8/7/98, 06??, Call Missed (GD2)

12132 M12, Frid 10/7/98, 1600, 963x3 1 3718 142 3718 142 (GD2)

12132 M12, Frid 3/7/98, 1600, 963x3 1 8795 143 (GD2)

12141 XPH Polytone station, 06.40 (July 10) TONES Long message,  
ca 5 mins. Very loud signal (AB)

12167 M12, Sun 12/7/98, 1840, 151x3 1 792 66 792 66 (GD2)

12167 M12, Sun 5/7/98, 1840, 151 151 151 1. 792 66 792 66  
1900 on 11567 1920 on 10567 (GD2)

13367 M12, Sun 28/6/98, 1840, 315x3 1 792 66 (GD2)

13371 M12, Tues 30/6/98, 0600, Call Missed (GD2)

★ LINCOLNSHIRE POACHER ★

5422 //6458 Lincolnshire Poacher (E3) 2200 (July 19) id 82534 (DR)

5422 //6485 Lincolnshire Poacher (E3) 1900 (July 18) id 82534 (DR)

5746 //6959//9251 Lincolnshire Poacher (E3) 2100 (July 19) id 75506 (DR)

6484 Lincolnshire Poacher (E3) 1800 (July 17) id 82534 (DR)

6900 //10426//11545 Lincolnshire Poacher (E3) 2023 (July 18) id in  
progress (DR)

6959 //10426//11545 Lincolnshire Poacher (E3) 2200 (July 20) id 75506 (DR)

6959 //11545 Lincolnshire Poacher (E3) 1700 (July 20) id 99843 (DR)

6959 //9251//11545 Lincolnshire Poacher (E3) 1900 (July 19) id 71416 (DR)



6959 //9251//11545 Lincolnshire Poacher (E3) 2000 (July 19) id 26079 (DR)  
 6959 //9251//11545 Lincolnshire Poacher (E3) 2100 (July 18) id 71416 (DR)  
 6959 //9251//11545 Lincolnshire Poacher (E3) 2200 (July 18) id 61235 (DR)  
 7337 //9251//12603 Lincolnshire Poacher (E3) 1800 (July 19) id 28290 (DR)  
 10426 //11545 Lincolnshire Poacher (E3) 1600 (July 19) id 99843 (DR)  
 10426 //12603//14487 Lincolnshire Poacher (E3) 1400 (July 20) id in  
 progress (DR)  
 11545 //12603//13375 Lincolnshire Poacher (E3) 1600 (July 18) id 28290 (DR)  
 11545 //12603//13375 Lincolnshire Poacher (E3) 1600 (July 20) id 61235 (DR)  
 11545 //12603//13375 Lincolnshire Poacher (E3) 1700 (July 18) id 26079 (DR)  
 11545 //12603//13375 Lincolnshire Poacher (E3) 1700 (July 19) id 47658 (DR)  
 11545 //13375//15682 Lincolnshire Poacher (E3) 1500 (July 20) id 89125 (DR)  
 11545 //13375//16084 Lincolnshire Poacher (E3) 1800 (July 18) id 75506 (DR)  
 11545 //14487//15682 Lincolnshire Poacher (E3) 1400 (July 19) id 89125 (DR)  
 11545 //14487//15682 Lincolnshire Poacher (E3) 1500 (July 19) id 61235 (DR)  
 11545 //16084 Lincolnshire Poacher (E3) 1700 (July 17) id 75506 (DR)  
 11545 Lincolnshire Poacher (E3) 1905 (July 17) id 89125 (DR)  
 14486 //15682 Lincolnshire Poacher (E3) 1300 (July 18) id 28290 (DR)  
 14487 Lincolnshire Poacher (E3) 1300 (July 19) id 71416. JAMMED (DR)  
 14487 //15682//16084 Lincolnshire Poacher (E3) 1200 (July 18) id 47658 (DR)  
 14487 //15682//16084 Lincolnshire Poacher (E3) 1200 (July 19) id 47658 (DR)  
 14487 //15682//16084 Lincolnshire Poacher (E3) 1200 (July 20) id 47658 (DR)  
 14487 //15682//16084 Lincolnshire Poacher (E3) 1300 (July 20) id 71416 (DR)

\* VARIOUS STATIONS \*

3389 SS/YL/5FG Atencion 123 USB 14/july (young YL) in progress,  
 presumed 0100 start Heavy ute QRM. Hard to tell, but it  
 seemed like it was LSB + USB (ie: sidebands but no carrier) (CS)  
 3824 M10 numbers station. 20.00 (june/21) CW 111x3 56056x3 30x3 15  
 15 30 30 + 5FG 15 15 30 30. No zero's at the end. Id is hand  
 sent. (AB)  
 3840 MOSSAD NO. STN. (E10) 1902 AM 13/july YHF, msg., my first log of  
 this freq. and callsign for Mossad, but i know it is around  
 a long time) [JRU]  
 3927 count stn (V5) 06/21/0100 USB (BR)  
 4015 CW 04:00 070998 5LG Cut numbers (M08) (RC)  
 4016 cut no's (M8) 06/22/0300 CW (BR)  
 4027 M8 03:00 070598 CW 5LG Cuban cut numbers (RC)  
 cut no's stn (M8) 0300 07/14/98 CW (BR)  
 4028 Atencion Stn. 04:50 070398 YL/SS 5FG "Atencion" These stations  
 are very good about starting right cn the top of the hour, but  
 today the broadcast started early. No "Atencion" call up but  
 several numbers slipped out. 04:54 "Atencion" call up then  
 2 numbers slip out. 05:00 broadcast starts as normal (RC)  
 SPANISH LADY (V2) 1142Z (13.07.98) AM in progress (SD)  
 4506 cut no's (M8) 06/18/0100 CW msgs IIMTA UIWRA WMGRA (BR)  
 cut no's stn (M8) 0100 (Jul 2) CW (BR)  
 CW 01:00 070998 5LG Cut numbers (M08)(RC)

4832 E23 Mon 22/6/98 0757 40764 66577 55357 Rest of week as per  
 schedule (GD2)  
 5050 M3 numbers station, ? 9.00 (July 3) CW 015/57 + 5FG (AB)  
 5127.5//5879.5 P7X 0155 on w/ 5L msgs (TS)  
 5180 S12 Cherta numbers station, ? 21.00 (July 1) USB 971/00 (AB).  
 5419 CW 03:00 070998 5LG Cut numbers (M08)(RC)  
 5421 AM 03:00 070998 YL/EE 5FG X2 "English man and Family" (E17) (RC)  
 5428 M12 numbers station, ? 19.00 (July 5) CW 941 941 941 000 (5 mins)  
 (AB)  
 5758 cut no's (M8) 06/24/0200 CW with msgs WAAMA UDUTA NWGNA (BR) Cut  
 numbers (M8) 0203 (24-6-98) CW (RST 599) (BL) M12 Sun 21/6/98  
 1900 941x3 000 (GD2)  
 5435 AM 0300 Monday 5/13/98 MOSSAD/E10 YL/EE rptg "ART". Extremely  
 weak. (JM4)  
 5530 "Victor Lima Bravo 2" MOSSAD E10 2000 6/julya YL with  
 "Nancy Adam Susan" E15 OM on same frequency. VLB should  
 have finished 2045, they seem to have forgotten to turn the  
 transmitter off in time for "NAS". Also happens sometimes  
 on 14000 before "Frank Young Peter" 1400z, a MOSSAD station  
 will sometimes appear around 1350 UTC. (SM)  
 5740 The three note oddity G4 2035 5/july msg:  
 36589 12147 54899 30125 45200 45214 95458 32548 65458 21025  
 12147 62025 78547 65458 62125 45214 65458 30258 65458 32125  
 54588 65458 62125 45214 32125 65458 63025 (HFD)  
 5758 cut no's stn (M8) 0200 (Jul 1) CW IGGUN UAGAN UIUAA (BR)  
 cut no's stn (M8) 0200 07/08/98 CW (BR)  
 5800 Atencion 03:00 062898 AM YL/SS 5FG "Attencion" //6826//6855 (RC)  
 5840 The three note oddity G4 2005 5/july msg:  
 36589 12147 54899 30125 45200 45214 95458 32548 65458 21025  
 12147 62025 78547 65458 62125 45214 65458 30258 65458 32125  
 54588 65458 62125 45214 32125 65458 63025  
 5879.5 P7X (??) 06/24/0215 CW with 5 ltr groups (BR)  
 6658 MOSSAD NO. STN. (E10) 1838 AM 13/july MIW, msg. by YL. my first  
 log of this freq. for Mossad. [JRU]  
 6745 MOSSAD NO. STN. (E10) 1755 AM 12/july KPA20PB-msg [JRU]  
 MOSSAD NO. STN. (E10) 1721 AM 13/july KPA2 (no msg today) [JRU]  
 6780 M1 numbers station, ? 7.00 (July 5) CW 025 (4 mins) 283 44 ==  
 5FG (AB)  
 6785 CW 06:00 070798 5LG Cut numbers (M08)(RC)  
 6786 AM 06:09 070898 YL/SS 5FG "Attencion" starts late today. Call  
 up "29721 11922 06242" same call up as 7726 log 1hr earlier (RC)  
 6786 cut no's (M8) 06/22/1000 CW (BR)  
 6797 AM 0200 Monday 7/13/98 Atencion/V2 YL/SS 5FG in progress. Down at  
 :46 w/three final. (JM4)  
 6797.5 Spanish YL Numbers 0215 29/june Strong AM but had to listen in  
 USB QRM from RTTY (WCA)  
 6825 cut no's (M8) 06/18/1200 CW msgs MIAAA RDRGD MARMN (BR)  
 cut no's stn (M8) 1200 (Jun 25) CW UDUTD ATRDA WAAMD (BR)

cut no's stn (M8) 1200 (Jul 2) CW MRIUN UDMTN WRMTA (BR)  
 cut no's stn (M8) 1200 07/09/98 CW (BR) M8 Tues 23/6/98  
 6826 Atencion stn (V2) 06/22/0300 AM (BR)  
 cut no's stn (M8) 1000 (Jul 7) CW (BR)  
 AM 03:00 070898 YL/SS 5FG "Atencion" call up "38049  
 57251 80051"(RC) AM 0300 Monday 5/13/98 Atencion/V2 YL/SS  
 rptg "Atencion 80053 58622 59683". (JM4)  
 6826.5 cut no;s stn (M8) 0200 (Jun 30) CW DTUID NGMUD UAGAA (BR)  
 6827 cut no's (M8) 06/16/0200 CW msgs AUUDA WARMA UIDTA (BR)  
 6840 MOSSAD NO. STN. (E10) 2103 AM 12/july EZI2 [JRU]  
 6854 CW 04:00 070998 5LG Cut numbers (M08) (RC) 6855 Atencion stn (V2)  
 06/22/0300 AM (BR)  
 6959 LINCOLNSHIRE POACHER (E3) 2105 USB 12/july tune, ID: 27294 [JRU]  
 6982 cut no's (M8) 06/22/1200 CW (BR) cut no's stn (M8) 1300 07/12/98  
 CW (BR) cut no's stn (M8) 1200 07/13/98 CW (BR)  
 6985 YL/SS 5FG. AM Mode, 0205 UTC Heavy QRM from adjacent SW Broadcast  
 on 6980kHz. Off at 0240 UTC with "FINAL"x3. (JM0)  
 7482 AM 04:00 070998 strong AM carrier present. This freq. sched for  
 Atencion spook at 03:00 but no transmission took place, no  
 carrier here at 03:00. Now at 04:00 an AM carrier is present. More  
 problems in Cuban spook land? (RC) SPANISH LADY (V2) 0444Z  
 (02.07.98) AM in progress (SD)  
 7583 Atencion stn (V2) 06/22/1000 AM new time/freq? (BR) Atencion stn  
 (V2) 06/24/0200 AM (BR) Atencion stn (V2) 0209 (24-6-98) AM end  
 0233 (BL) Atencion stn (V2) 0204 (Jul 1) AM (BR) Atencion stn  
 (V2) 0200 07/08/98 AM (BR)  
 7726 SPANISH LADY (V2) 0549Z (24.06.98) AM in progress (SD) AM 05:03  
 070898 YL/SS 5FG "Atencion" starts late today. Call up "29721  
 11922 06242" // 9153 (RC)  
 7846 cut no's stn (M8) 1100 (Jul 1) CW NTGID MAMAN DDNGD (BR)  
 cut no's stn (M8) 1100 (Jul 7) CW AGAUA NWAAN MAMNN (BR)  
 cut no's stn (M8) 1100 07/08/98 CW (BR)  
 7887 AM 0200 Sunday 7/12/98 Atencion/V2 YL/SS rptg "Atencion 38049  
 53231 20561"(JM4)  
 7888 CW 0100 Tuesday 5/14/98 ANDUWRIGMT/M8 5F/L/G (JM4)  
 cut no's stn (M8) 0100 (Jun 30) CW DTUID NGMUD UAGAA (BR)  
 7889 cut no's (M8) 06/16/0100 CW (BR)  
 8067 cut no's (M8) 06/22/1100 CW (BR) cut no's stn (M8) 1100 (Jul 1)  
 CW GDUDN AWARD ARDWA (BR) cut no's stn (M8) 1100 07/08/98 CW (BR)  
 8126 RUSSIAN MAN (S7) 0500Z (18.06.98) AM callup 138 138 138 1 id 248  
 72 (SD) RUSSIAN MAN (S7) 0500Z (30.06.98) AM callup 138 138 138 1  
 id 248 72 (SD)  
 8166 RUSSIAN MAN (S7) 0500Z (14.07.98) AM callup 131 131 131 1 id 248  
 72 (SD) RUSSIAN MAN (S7) 0500Z (14.07.98) AM callup 131 131 131 1  
 id 248 72 (SD)  
 8185 cut no's stn (M8) 1100 (Jun 25) CW ANIDN RRGWD MAAMD (BR)  
 8187 cut no's stn (M8) 1100 07/09/98 CW (BR)  
 8307 M23 numbers station, 8.00 (July 5) CW 579 for 10 mins //9285 (AB)

8320 Cherry Ripe number station, 1200 23/july id 72337 (good signal)(NJ)  
 // 12056 // 13866 Cherry Ripe E4 1200 24/june usb 58820 5ngs  
 05104.(CT) CHERRY RIPE (E4) 1200Z (19.06.98) USB id 13235 (SD)

8320 // 12056 // 13866 e4 1301utc usb 55109 5ngs 73222.(CT)

9216 GMN FAPSI (M42) 06/18/0052 rpt of "TIKAS" msg (BR)

9238 SPANISH LADY (V2) 0600Z (24.06.98) AM id 41823, 33411, 41731 (SD)  
 AM 06:00 070898 YL/SS 5FG "Attencion" very weak (RC)  
 SPANISH LADY (V2) 0606Z (01.07.98) AM in progress (SD)

9251 // 7337, 12603 LINCOLNSHIRE POACHER (E3) 1906 USB 13/july tune,  
 ID: 76557, msg. [JRU]

9260 YL/SS 5F (V2) 0211 (24-6-98) AM. Does not seem to be parallel to  
 7583 (different voice). (BL) Atencion stn (V2) 0200 (Jul 1) AM (BR)  
 AM 02:00 070898 YL/SS 5FG "Attencion" call up "616 07"(RC)  
 Atencion stn (V2) 0200 07/08/98 AM (BR)

9263 Cherry Ripe number station, 1100 23/june id ? (good signal)(NJ)

9263 // 13866 // 14469 e4 1115utc usb 5 ngs missed callup.(CT)

9263 //13866 //14469 Cherry Ripe E4 1100 7/july ID: 72243 5ngs 6985.(CT)

9263 CHERRY RIPE (E4) 1119Z (13.07.98) USB very weak and in progress (SD)

9268 SPANISH LADY (V2) 0600Z (16.06.98) AM id 971 04 and 584 02 (SD)

9285 M23 numbers station, 8.00 (July 5) CW 579 for 10 mins // 8307 (AB)

9326 RUSSIAN MAN (S7) 0525Z (16.06.98) AM in progress (SD)  
 0520Z (18.06.98) AM callup 138 138 138 1 id 248 72 (SD) 0520Z  
 (30.06.98) AM callup 138 138 138 1 id 248 72 (SD)

9366 RUSSIAN MAN (S7) 0520Z (14.07.98) AM callup 131 131 131 1 id 248  
 72 (SD) 0520Z (02.07.98) AM callup 131 131 131 1 id 248 72 (SD)

9393 HIGH PITCHED POLYTONE (XPH) 0603Z (24.06.98) AM in progress (SD)  
 HIGH PITCHED POLYTONE (XPH) 0603Z (26.06.98) AM (SD)

9394 XPH - Polytone Station 0600 AM 24/june SINPO 45444. Carrier already  
 on at 0557z/off at 0604z/tx moved to 11494kHz within 1 minute.  
 (ABe) XPH - Polytone Station 0600 AM 26/june SINPO 55544 off at  
 0605z/tx moved to 11494kHz at 0606z.(ABe)

9415 CUBA/SPOOK The Bored Man 1413-1425\*, USB 28/june SP M "R290" msg  
 & longcounts, first time noted here, // usual 6868/4106, all  
 good. Suspect this one will get out very well. (ANUS) Atencion Stn  
 V203:55 AM 070598 YL/SS 5FG This broadcast started = early with  
 "Attencion, Attencion, Attencion, Attencion" then a pause =  
 "Attencion, Attencion 974 011111111111.....etc...." the computer  
 got = stuck on uno and repeated it many times. The operator realizes  
 it and = you hear some beeps from someone resetting the computer.  
 04:00 = broadcast starts as normal "Attencion 974 01" call up msg  
 01 45 then = into 5FG finale X2 04:06. "Attencion 974 01" call up  
 msg 01 45 then = into 5FG at 04:08. finale X2 04:12. This one  
 seems to be short every = week. (RC) The Bored Man USB 1400 Sunday  
 7/12/98. SS/OM rpt "? 7 23" (couldn't make out the letter). Better  
 copy than 6868, but still tough.(CS)

9441 XPH - Polytone Station 0600 AM 03/july SINPO 43554 off at 0604z.  
 Tx moved to 11041kHz immediately. Broadcast Station QRM. (ABe)  
 XPH-Polytone Stn. 0600 USB 22/july carrier from 0554, tones. (JRU)

XPH - Polytone Station 0600 AM 8/july SINPO 43544 off at 0605z. Tx moved to 11041kHz at 0606z. Broadcast Station QRM. 0600 AM 10/july SINPO 52544 off at 0605z. Tx moved to 11041kHz at 0606z. Broadcast Station QRM. (ABe) 0600Z (15.07.98) AM (SD)

10223 count stn (E5) 06/17/1200 USB msg 869 count 215. 1200 (Jul 1) USB msg 690 count 215. 1200 07/08/98 USB with msg 690 count 215 (BR)

10234 AM 0400 Monday 7/6/98 Atencion/V2 YL/SS 5FG in progress. Very weak.Possible replacement for 6768 which was silent.(JM4)

10321 AM 12:00 070898 YL/EE 3+2FG "Counting" (E05) // 13906 (RC)

10328 BPA FAPSI (M42) 06/20/1550 rpt of above (BR)

10452 Cherry Ripe number station 1000 23/june id 94346 (good signal)(NJ) 1000Z (13.07.98) USB very weak simulcast 15624//17499 (SD) 1000 23/june id 94346 (good signal)(NJ). 1000Z (13.07.98) USB very weak simulcast 15624//17499 (SD)

10566 cut no's stn (M8) 1300 07/12/98 CW (BR)

10826 RUSSIAN MAN (S7) 0540Z (18.06.98) AM callup 138 138 138 1 id 248 72 (SD) 0540Z (30.06.98) AM callup 138 138 138 1 id 248 72 (SD)

10858 cut no's (M8) 06/18/1200 CW msgs GDRMN DMWIA NTDGN (BR) cut no's (M8) 06/16/1200 CW msgs MDWDD NUGAN WRAUD (BR) cut no's (M8) 06/23/1200 CW with msgs GAGIN RNATD NWNRN (BR) cut no's stn (M8) 1200 (Jun 25) CW DUDMA RRNUN WGIGA (BR) cut no;s stn (M8) 1200 (Jun 30) CW (BR) cut no's stn (M8) 1200 (Jul 7) CW NNMIR GTRNN RTRMN (BR) cut no's stn (M8) 1200 07/09/98 CW (BR) cut no's stn (M8) 1200 07/14/98 CW (BR)

11041 XPH - Polytone Station 0620 AM 03/july SINPO 554440ff at 0624z. Tx moved to 12141kHz immediately.(ABe) 0610 USB 22/july tones (JRU) 0620 AM 8/july SINPO 44544 Off at 0625z. Tx moved to 12141kHz at 0626z. (ABe) 0620 AM 10/july SINPO 55445 Off at 0625z. Tx moved to 12141kHz at 0626z.(ABe) 06.20 (July 10) TONES Long message, ca 5 mins. Very loud signal (AB) 0620Z (01.07.98) AM with new callup tones (SD) 0620Z (15.07.98) AM (SD)

11147 SPANISH MAN (V7) 0600Z (18.06.98) AM callup 118 118 118 1 id 810 37 (SD) 0600Z (30.06.98) AM callup 118 118 118 000 null message (SD) V7 Tues 23/6/98 0600 118x3 000 (GD2)

11149 Spanish Man V7 0600 23/june AM ss/om/frequency id-118/call-'000'/no tfc SINPO 55444 off at 0605z. Tx moved imediately to 12149 kHz (ABe) Spanish Man V7 0600 25/june AM ss/om/frequency id-118/call-'000'/no tfc SINPO 54555 off at 0605z. Tx moved immediately to 12149 kHz. (ABe) Spanish Man V7 0600 AM 30/june ss/om/frequency id-118/call-'000'/no tfc SINPO 55555 off at 0605z. Tx moved immediately to 12149 kHz. (ABe)

11166 RUSSIAN MAN (S7) 0540Z (14.07.98) AM callup 131 131 131 1 id 248 72 (SD) 0540Z (14.07.98) AM callup 131 131 131 1 id 248 72 (SD)

11270 S25 Mon 22/6/98 0820 615 01738 08328 (GD2)

11461 Spanish Man V7 0600 AM 02/july ss/om/frequency id-403/call-'000'/no tfc SINPO 55545 off at 0604z. Tx moved to 12061 kHz within 30 seconds. (ABe) Spanish Man V7 0600 7/july ss/om/frequency id-403 /message-1/id key-5829/gc-39/5fg SINPO 45444 off at 0609z with

000 000. Tx moved to 12061 kHz at 0610z. (ABe) Spanish Man V7  
0600 9/july ss/om/frequency id-403/message-1/id key-5829/gc-39/  
5fg SINPO 42543 off at 0609z with 000 000. Tx moved to 12061 kHz  
at 0610z. (ABe) Spanish Man V7 0600 AM 14/july ss/om/frequency  
id-403/call-000/No tfc SINPO 43454 off at 0605z. Tx moved to 12061  
kHz at 0606z.(ABe)

11494 HIGH PITCHED POLYTONE (XPH) 0620Z (24.06.98), 0620Z (26.06.98)  
(SD) 0620 AM 24/june SINPO 55535 Off at 0624z/tx moved to 13394kHz  
within 1 minute.(ABe) 0620 26/june AM SINPO 45434 Off at 0625z/ tx  
moved to 13394kHz at 0626z.(ABe)

11570 // 12866 Cherry Ripe E4 1300utc usb 72243 5ngs. (CT)

11634 Russian man 0100 (Jul 2) AM with 627 x3 then 00000 (BR)

11637 GMN FAPSI (M42) 06/18/0045 RTTY 75/425 with "TIKAS" msg (BR)  
GMN FAPSI (M42) 0045 (Jul 2) RTTY 75/425 46's - no tfc (BR)

12056 Cherry Ripe number station, 1200, 23/july id 72337 (poor signal)(NJ)

12061 Spanish Man V7 0610 AM 02/july ss/om/frequency id-403/call-'000'  
no tfc SINPO 55545 off at 0616z. Tx off immediately.(ABe) Spanish  
Man V7 0620 7/july ss/om/frequency id-403/message-1/id key-5829  
gc-39/5fg SINPO 44444 off at 0629z with 000 000. Tx moved to 13361  
kHz at 0633z. (ABe) Spanish Man V7 0620 AM 9/july ss/om/frequency  
id-403/message-1/id key-5829/gc-39/5fg SINPO 45544 off at 0629z  
with 000 000. Tx moved to 13361 kHz at 0630z.(ABe) Spanish Man V7  
0610 14/july ss/om/frequency id-403/call-000/No tfc SINPO 55445  
off at 0615z. Tx off immediately. (ABe)

12092.8 ??? 1304-1337 8/july CW mmm o mmmmmm o mm o 0 oomo mom00  
mm o mo t later into amiru widda wmwdd tugwt drmnr = = = tatr  
aangr, this is below 12095 BBC, very strong s15 - 20 dB at times.  
I was unable to find a listing for this broadcast?? Is it a new  
one Guy??? (CT) sounds like cuban cut numbers with tx problems -jru

12141 XPH - Polytone Station 0640 AM 03/july SINPO 55545 Off at 0644z.  
Tx off at 0645z.(ABe) 0640 AM 8/july SINPO 55555 Off at 0645z. Tx  
off at 0646z. (ABe) 0640 AM 10/july SINPO 55344 Off at 0645z. Tx  
off at 0646z. (ABe) 06.40 (July 10) TONES Long message, ca 5 mins.  
Very loud signal (AB) 0640Z (15.07.98) AM (SD)

12147 SPANISH MAN (V7) 0620Z (18.06.98) AM callup 118 118 118 1 id 810  
37 (SD)

12149 Spanish Man V7 0610 23/june AM ss/om/frequency id-118/call-'000'  
no tfc SINPO 55545 off at 0616z. Tx off imediately. (ABe) 0610 AM  
26/june ss/om/frequency id-118/call-'000'/no tfc SINPO 44444 off  
at 0616z. Tx off immediately (ABe) 0610 AM 30/june ss/om/frequency  
id-118/call-'000'/no tfc SINPO 45544 off at 0616z. Tx off  
immediately.(ABe)

12167 M12 numbers station, ? 18.40 (July 5) CW 151 151 151 1 (5 mins) 792  
66 5FG 000 000 (AB)

12215 cut no's (M8) 06/16/0100 CW (BR)

12300 //14421The Counting Station - Spanish Language Service (V5) is  
now on the air at 0200 on Sat, 7/11/98 with the latter giving better  
reception here at my QTH. Message to "697". Count 122. (CS)

12603 // 7337 LINCOLSHIRE POACHER (E3) 1803 12/july tune, ID: 76557  
and msg follows [JRU]  
13361 Spanish Man V7 0640 7/july ss/om/frequency id-403/message-1/id  
key-5829/gc-39/5fg SINPO 55555 off at 0649z with 000 000. Tx off  
immediately. (ABe) 0640 AM 9/july ss/om/frequency id-403/message-1  
id key-5829/gc-39/5fg SINPO 55555 off at 0649z with 000 000. Tx off  
immediately.(ABe)  
13374 cut no's stn (M8) 1800 (Jun 29) CW (BR)  
13394 HIGH PITCHED POLYTONE (XPH) 0640Z (24.06.98) AM (SD) 0640Z (26.06.  
98) AM (SD) 0640 24/june AM SINPO 45334 Off at 0644z. Tx off within  
1 minute.(ABe) 0640 AM 26/june SINPO 35333 Off at 0645z. Tx off  
within 30 seconds.(ABe)  
13556 HZW FAPSI (M42) 06/20/2008 rpt of above (BR) 2012 (Jul 6) RTTY  
75/425 1/503 (BR)  
13847 SPANISH MAN (V7) 0640Z (18.06.98) AM callup 118 118 118 1 id 810  
37 (SD)  
13866 Cherry Ripe number station, 1100 23/june id ? (poor signal)(NJ)  
1200 23/julyid 72337 (poor signal)(NJ)  
13906 Count stn (E5) 06/17/1200 USB msg 222 count 215 (BR) 1200 (Jul 1)  
USB msg 222 count 215 (BR) 1200 07/08/98 USB with msg 222 count  
215 (BR)  
14421 AM 03:00 070798 YL/SS 3+2FG "Counting" (V05) (RC) 0300 07/14/98  
USB (BR)  
14469 EE/YL 5FIGx2 stn 1100 07/09/98 AM - who is this? (BR)  
14650 crypto stn 0029 (Jun 30) RTTY 75/200 sent "DE 074 ZNY CCCCC/CCCC  
BT" then 5LG's repeated at least 6 times, then off at 0052 (BR)  
14731 BPA FAPSI (M42) 06/20/1515 RTTY 75/425 with 7/2593 msgs (BR)  
1515 (Jun 29) RTTY 75/425 46's - no tfc (BR) 1515 (Jul 6) RTTY  
75/425 46's - no tfc (BR)  
14843 JMS FAPSI (M42) 06/23/2220 carrier on for abt 30 secs, then off  
never came on at 2230 for sked but at 2320 hrd morse "O" sent  
followed by 2 sec burst of hi spd data. Have hrd this on other  
freqs as well. (BR) JMS FAPSI (M42) 2230 (Jul 1) RTTY 75/425 46's  
- no tfc (BR) JMS FAPSI stn (M42) 2230 07/08/98 RTTY (75/425)  
with 46's only (BR)  
14941 WNY FAPSI (M42) 1810 (Jul 6) RTTY 75/425 1/337 (BR)  
15478 // 16050 count stn (V5) 06/24/0100 USB msg 902 count 142 (BR)  
0100 (Jul 8) USB msg 407 count 219 (BR) 0100 USB 07/10/98 with msg  
407 (BR) 01:00 070898 YL/SS 3+2FG "Counting" (V05) (RC) 0100  
07/15/98 USB with msg 407 count 219 (BR)  
15735 TCS E5 1235-1251 7/july AM 3ngs / 2ngs finished with end.  
very good signal strength s10-15dB.(CT)  
16086 The Counting Stn. E5 1140 usb/am 3ng/2ng.(CT) A new freq??? (CT)  
1100 07/09/98 USB with msg 414 count 215 (BR)  
16207 Spanish man 2000 (Jun 29) AM 694 x 3 then 000 til 2005 (BR)  
16218 HZW FAPSI (M42) 06/20/2000 RTTY 75/425 with 1/143 msg (BR)  
HZW FAPSI (M42) 2000 (Jul 6) RTTY 75/425 1/503 (BR)  
17499 CHERRY RIPE (E4) 2300Z (14.07.98) USB id 15185 simulcast

20474//23461 (SD)  
18444.5 crypto stn 0030 (Jul 2) CW sent like "NR 73 J 02 0274754  
19NR8 BT" then 5LG's til past 0130 (BR)  
19088 WNY FAPSI (M42) 1800 (Jul 6) RTTY 75/425 1/337 (BR)  
19884 USB 0100 Tuesday 5/14/98 Cherry Ripe/E4 Extremely weak - only  
tune was audible. (JM4)

##### contributors #####

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73, 000 000 ZNN DE JASCHA